

Step into the future.



Le Fil Rouge, our latest concept car, combines design and technology to create an experience which turns drive time into quality time. Coming soon.

hyundai.com/worldwide



HYUNDAI

HYUNDAI is a registered trademark of Hyundai Motor Company. All rights reserved. ©2018 Hyundai Motor Company.

How will Imran govern Pakistan?

Germany sulks (not just about football)

Productivity: The hand-spinner's tale

Liberalism's greatest thinkers

In the line of fire

Losing the war against climate change





Only
a free mind
can fly.

Apply AI to power every human decision.
Let your people's imagination take you places.

#AIforGood



fractalanalytics.com



On the cover

The world is losing the war against climate change: **leader**, page 7. India shows how hard it is to move beyond fossil fuels towards a renewable future, page 16. In America some Republicans are inching towards action on global warming, page 29. Software can model how a wildfire will spread—and how to stop it happening, page 64. Russia's nuclear ambitions, page 24

The Economist online

Daily analysis and opinion to supplement the print edition, plus audio and video, and a daily chart Economist.com

E-mail: newsletters and mobile edition Economist.com/email

Print edition: available online by 7pm London time each Thursday Economist.com/printedition

Audio edition: available online to download each Friday Economist.com/audioedition

The Economist

Volume 428 Number 9103

Published since September 1843 to take part in "a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."

Editorial offices in London and also:

Beijing, Berlin, Brussels, Cairo, Chicago, Madrid, Mexico City, Moscow, Mumbai, Nairobi, New Delhi, New York, Paris, San Francisco, São Paulo, Seoul, Shanghai, Singapore, Tokyo, Washington DC

5 The world this week

Leaders

- 7 **Global warming** In the line of fire
- 8 **Euro-zone austerity** Climbing the Greece-y pole
- 8 **The Horn of Africa** Making Eritrea less horrible
- 10 **Brexit** No ordinary deal
- 12 **Philosophy brief** The brains trust

Letters

- 13 **On Brexit, the Helsinki summit, Spain, cinema, Foucault**

Briefing

- 16 **Indian energy** The black hole of coal

Britain

- 19 **Brexit with no deal** Ready or not
- 20 **Stockpiling** Prepping for Brexit
- 21 **The Lib Dems** Entryist dads
- 21 **The right to die** An end to proceedings
- 22 **Slavery** Of manacles and manicures
- 23 **Espionage and business** Tinker, techie, startup, spy

Europe

- 24 **Russia and nuclear power** The global supplier
- 25 **Turkey v America** Erdogan's hostages
- 26 **Ukrainian politics** The dark operetta
- 26 **Biochips and Swedes** Bjorn Cyborg
- 27 **Charlemagne** Cheer up, Deutschland

United States

- 28 **The Democrats** Splitting the difference
- 29 **Climate politics** A slow thaw
- 30 **Lipizzans** Dancing horses
- 30 **The GDP figures** Growing pains
- 31 **Defence spending** Pushing the boat out
- 32 **Lexington** A small win in Afghanistan

The Americas

- 33 **Brazilian banks** In the doldrums, full sails
- 34 **Argentina's beef exports** Bull market
- 34 **Cannabis in Canada** The high street
- 35 **Bello** Judging the judges

Middle East and Africa

- 36 **Eritrea** Unlock the desert gulag?
- 37 **Zimbabwe's elections** A bloody ballot
- 38 **Syria's refugees** The long road back
- 38 **Churches in Saudi Arabia** Rethinking the ban
- 39 **Debtors' prisons in Gaza** From bankrupt to banged up

Asia

- 40 **Pakistani politics** A man, no plan, Imran
- 41 **Citizenship in India** Assamese, if you please
- 41 **Rebellion in the Philippines** Murder in Mindanao
- 42 **Seoul's mayor** Fan fare for a common man
- 43 **Banyan** Japan's work habits



Germany sulks Excessive pessimism has become the country's biggest threat: **Charlemagne**, page 27



Greece As it emerges from crisis, it still has a daunting path ahead: **leader**, page 8. The economy is at last expanding again, but the crisis has caused lasting damage, page 57



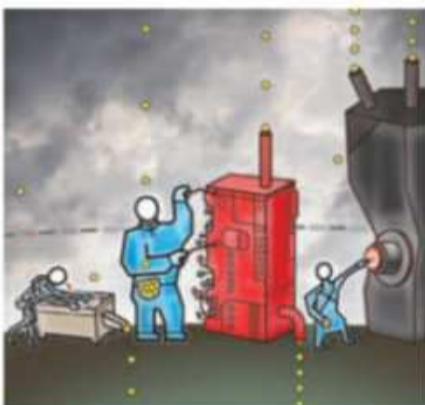
Eritrea Peace gives the North Korea of Africa a chance to open up: **leader**, page 8. A repressive dictatorship ponders reform, page 36



Pakistan Might Imran Khan surprise as prime minister? Page 40. Donald Trump is better on Afghanistan than his predecessor was: Lexington, page 32



Mission statements When visions and values descend into verbiage: Bartleby, page 50



Productivity The history of spinners' wages at the start of the Industrial Revolution could shed light on a modern mystery: Free exchange, page 61

China

44 **Tianjin's woes**
Where are the people?
45 **Dog racing in Macau**
Bow-wow-ing out

International

46 **The world order**
Coalitions without Trump

Business

49 **China's new dealmakers**
The venture whales
50 **Bartleby**
Mission implausible
51 **The technology industry**
FATWIN v MAGA
52 **Food labelling**
Got oats?
52 **Business and demography**
Silver linings
53 **Autonomous cars**
Gently does it
54 **The blockchain and energy**
Greens meet geeks

Philosophy brief

55 **John Stuart Mill**
Tyranny of the majority

Finance and economics

57 **Greece**
Far from the finish line
58 **Consumer lending**
Buy now, pay later
59 **Asset management**
How low can you go?
59 **Myanmar's state-owned enterprises**
Living fossils
60 **Buttonwood**
Made in Japan
61 **Free exchange**
Homespun economics

Science and technology

64 **Wildfires**
Forewarned is forearmed
65 **Long sightedness**
I can see clearly now
66 **Environmental safety**
Hazchem or not?
66 **Marine biology**
The biter bit

Books and arts

67 **Ten years on**
The last crash, and the next
68 **Classical music**
Making an orchestra
69 **Mikhail Zoshchenko**
Soviet satire
69 **Indian independence**
Midnight at the margins
70 **Johnson**
The cost of an accent

Economic and financial indicators

Statistics on 42 economies, plus a closer look at manufacturing

Obituary

74 **Mary Ellis**
In love with Spitfires



Philosophy brief We begin our six-part series on liberalism's greatest thinkers. Their ideas still matter: leader, page 12. John Stuart Mill, the father of liberalism, page 55

Subscription service

For our full range of subscription offers, including digital only or print and digital combined visit

Economist.com/offers

You can also subscribe by mail or telephone at the details provided below:

Telephone: +44 (0) 845 120 0983

Web: Economist.com/offers

Post: The Economist Subscription Centre, P.O. Box 471, Haywards Heath, RH16 3GY UK

Subscription for 1 year (51 issues)
Print only UK - £145

Principal commercial offices:

The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT

Tel: +44 (0) 20 7830 7000

Rue de l'Athénée 32

1206 Geneva, Switzerland

Tel: +41 22 566 2470

750 3rd Avenue, 5th Floor, New York, NY 10017

Tel: +1 212 541 0500

1301 Cityplaza Four,

12 Taikoo Wan Road, Taikoo Shing, Hong Kong

Tel: +852 2585 3888

Other commercial offices:

Chicago, Dubai, Frankfurt, Los Angeles, Paris, San Francisco and Singapore



PEFC certified

This copy of *The Economist* is printed on paper sourced from sustainably managed forests certified by PEFC www.pefc.org



Politics



Three people were shot and killed by the army in **Zimbabwe** just hours after the electoral commission announced that the ruling Zanu-PF had won a majority in parliament in the first elections since a coup removed Robert Mugabe last year. The supposedly neutral commission is taking time to release the results of the presidential election.

Three Russian journalists were killed in the **Central African Republic**, apparently while investigating the activities of a Russian private military company, Wagner, that has deployed troops in the country and is helping to train its armed forces.

Jean-Pierre Bemba, a former warlord, returned to the **Democratic Republic of Congo** to contest presidential elections later this year. He was freed from prison in The Hague after the International Criminal Court overturned his conviction for war crimes.

Iran's economy continued to struggle, as the value of the rial sunk to a new low against the dollar. Nevertheless, Iranian officials rejected Donald Trump's offer of talks without preconditions. In May Mr Trump pulled America out of a deal that curbs Iran's nuclear-weapons programme in return for the lifting of sanctions.

Nothing to be proud of
The number of murders in **Mexico** increased by 27% last year to a record 31,174, according to the country's statistics institute. It had earlier said there were a little over 25,000 homicides in 2017. The murder

rate of 25 per 100,000 people is also the highest on record.

Venezuela's ruling United Socialist Party re-elected the country's president, Nicolás Maduro, as its leader in a conference that took place during a blackout. Mr Maduro, who normally blames the country's economic woes on "imperialism", accepted responsibility for the distress. "Enough with whining," he said.

Going out to bat

Imran Khan began talking to smaller parties about forming a governing coalition in **Pakistan** after his Tehreek-e-Insaf party won the most seats in the National Assembly. The losing Pakistan Muslim League-Nawaz and the Pakistan Peoples Party backed away from pressing their claim that the election had been rigged by security officials. Meanwhile, Pakistan was reported to be preparing to ask the IMF for a bail-out, but America said it would oppose such a deal if it was used to pay off Chinese loans.



In **Cambodia** Hun Sen won another term as prime minister, an unsurprising result given that the main opposition party was barred from running in the election. Hun Sen has been in power since 1985. The vote was widely condemned.

Lu Wei, once **China's** top internet regulator, was charged with taking bribes. Prosecutors said that he abused his position and accepted a "huge amount of money and property". Mr Lu had risen to great heights under Xi Jinping, gaining deferential treatment from Silicon Valley chieftains such as Mark Zuckerberg. This year the Communist Party expelled

him, saying he had been "tyrannical" and "shameless".

Google was reportedly developing a **censored** version of its search engine for China. It was said to have been working in secret on a censored-search app since last year, and to have demonstrated it to Chinese officials. Google left China in 2010 to uphold its old motto, "Don't be evil".

Australia's Labor Party won four of five by-elections held on the same day. The fifth was won by an independent candidate. The results leave the ruling Liberal-National coalition headed by Malcolm Turnbull with a one-seat majority in Parliament. A general election must be held before November 2019.

Abu Sayyaf, an Islamist group, was thought to be behind a van bomb that killed ten people at a military checkpoint on the southern **Philippine** island of Basilan. The attack happened a few days after Rodrigo Duterte, the president, signed a law granting autonomy to Muslims in the south.

Data from the University of Maryland showed that the number of **terrorist attacks** dropped by a fifth in 2017. Deaths related to terror attacks fell by 25%. The worst affected countries were Iraq, Afghanistan, India, Pakistan and the Philippines. Their share of attacks increased from 50% in 2015 to 57% last year. Islamic State and the Taliban were to blame for a fifth of all attacks and nearly half of all deaths, a total of 12,045 people.

A game of chicken

Michel Barnier, the EU's **Brexit** negotiator, issued a lukewarm response to the British government's latest proposals on customs and the Irish border. British ministers stepped up their warnings that European intransigence could see Britain crashing out of the EU without a deal when it leaves in March.

A war of words erupted between **Turkey** and the United States over Andrew Brunson,

an evangelical pastor who has been detained in Izmir since 2016 on questionable charges. Mr Brunson was released from prison but placed under house arrest. America imposed financial sanctions on two Turkish ministers in response.

On their way home



North Korea handed over the remains of 55 **American servicemen** killed during the Korean war to American authorities. Donald Trump thanked the regime for returning the remains, a concession that was agreed to at a summit between Mr Trump and Kim Jong Un, the North's dictator, in June. The remains will be examined by a forensics team in Hawaii for identification. In 1990 the remains of what were thought to be five American soldiers returned by North Korea turned out to be seven.

Paul Manafort, Mr Trump's former campaign manager, went on trial for fraud. He is accused of laundering money from his work for pro-Russian politicians in Ukraine and then avoiding tax. It is the first trial examining alleged links between Trump aides and Russian interests to stem from the investigation led by Robert Mueller, the special counsel.

The start of Mr Manafort's trial seemed to rattle Mr Trump. He publicly called on Jeff Sessions, the attorney-general, to end the **Mueller investigation** (something that Republicans have repeatedly warned him not to do), despite Mr Sessions having recused himself from the inquiry.

Mr Trump also threatened to shut down the government unless Congress fully funds his **border wall** with Mexico. ►

Business

Diverging from other central banks that have moved to unwind their stimulus programmes, the **Bank of Japan** said it was committed to keeping interest rates "extremely low" for the foreseeable future, and pledged to continue buying bonds. Haruhiko Kuroda, the central bank's governor, said the forward guidance should "counter speculation... that the bank is heading towards an early exit or an increase in rates".

The **Federal Reserve** kept its benchmark interest rate on hold at its policy meeting. But with the American economy growing by an annualised rate of 4.1% in the second quarter, its best performance since the middle of 2014, the Fed is widely expected to increase rates in September. The **Bank of England** raised its main rate for the first time since November (and only the second time since 2007) by a quarter of a percentage point, to 0.75%.

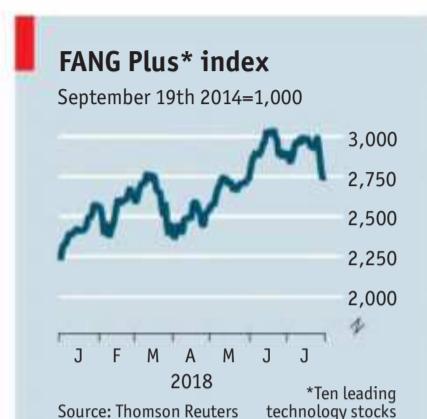
Turkey's central bank raised its forecast for the country's inflation rate this year to 13.4%, from the 8.4% it had predicted in April. A weak lira has pushed up prices, but the central bank has not raised interest rates by much in response.

GDP in the **euro zone** expanded by 0.3% in the second quarter compared with the previous three months. That was the slowest rate of growth by that measure in two years, raising concerns that the prospect of an escalating trade war with America might be hurting the region's exports.

Political interference

Facebook said that it had closed down several disinformation accounts on its sites that were set up to disrupt the mid-term elections. Although smaller in scale than the attempt to influence the presidential election in 2016, it is thought that this was a similar Russian campaign to sow discord. However, the latest

attack was more sophisticated, using virtual private networks to try to avoid detection.



Twitter's share price slumped after it reported that the number of monthly active users to its platform had fallen by 1m in the second quarter compared with the previous three months. And **Netflix's** share price took another hammering; it recently reported a shortfall in adding new subscribers. This came after Facebook took a drubbing in the markets when it revealed similarly disappointing user growth.

By contrast, **Apple** beat expectations with its quarterly earnings report. Revenue was up by 17% compared with the same three months last year, to \$53.3bn, boosted by the higher price it charges for the iPhone X (sales of total iPhone units only increased by 1%). Net profit rose by a third, to \$11.5bn.

A rescue deal to save **House of Fraser** fell through when the Chinese firm backing the arrangement pulled out following a steep fall in its share price. That leaves the future of the British chain of department stores in doubt.

Bumper Profit

After years of retrenchment following the Deepwater Horizon disaster, **BP** reported a hefty jump in headline profit for the second quarter, to \$2.8bn. The energy giant is increasing its dividend for the first time in four years. It is also undertaking its biggest acquisition in two decades by agreeing to buy **BHP's** shale assets in America for \$10.5bn.

With its income buoyed by higher commodity prices, **Rio Tinto** announced a package of returns to shareholders worth \$7.2bn. The mining company reported an underlying half-year profit of \$4.4bn.

Fidelity surprised its rivals by becoming the first big investment firm to launch new index-tracking stock funds with no fees for investors. It also slashed the charges on its existing funds. The announcement underscores fee competition in the industry as it moves away from a reliance on the

expertise of stock-pickers towards low-cost, index-based funds.

BMW raised the price of sport-utility vehicles it sells in China to offset some of the cost of the retaliatory tariffs that China imposed on American car imports. **BMW** makes its SUV models for export to the country at a factory in South Carolina, though it is ramping up production in China. **Tesla**, which has also raised the price of its cars in China, reported a quarterly loss of \$717.5m. But it pleased investors by burning less cash than had been expected and by promising to turn a profit later this year.

Time to put your phone down

A range of tools were unveiled for the Facebook and Instagram platforms that will enable users to **limit the time** they spend engrossed on their apps. Concerns about addiction to social media are on the rise; surveys have revealed that on average people check their phones 50 times a day. The tools require a degree of discipline by users to be effective. But if users had that discipline, perhaps they would not need time-limiting tools.

For other economic data and news see Indicators section



In the line of fire

The world is losing the war against climate change



EARTH is smouldering. From Seattle to Siberia this summer, flames have consumed swathes of the northern hemisphere. One of 18 wildfires sweeping through California, among the worst in the state's history, is generating such heat that it created its own weather. Fires that raged through a coastal area near Athens last week killed 91 (see Science section). Elsewhere people are suffocating in the heat. Roughly 125 have died in Japan as the result of a heatwave that pushed temperatures in Tokyo above 40°C for the first time.

Such calamities, once considered freakish, are now commonplace. Scientists have long cautioned that, as the planet warms—it is roughly 1°C hotter today than before the industrial age's first furnaces were lit—weather patterns will go berserk. An early analysis has found that this sweltering European summer would have been less than half as likely were it not for human-induced global warming.

Yet as the impact of climate change becomes more evident, so too does the scale of the challenge ahead. Three years after countries vowed in Paris to keep warming “well below” 2°C relative to pre-industrial levels, greenhouse-gas emissions are up again. So are investments in oil and gas. In 2017, for the first time in four years, demand for coal rose. Subsidies for renewables, such as wind and solar power, are dwindling in many places and investment has stalled; climate-friendly nuclear power is expensive and unpopular. It is tempting to think these are temporary setbacks and that mankind, with its instinct for self-preservation, will muddle through to a victory over global warming. In fact, it is losing the war.

Living in a fuel's paradise

Insufficient progress is not to say no progress at all. As solar panels, wind turbines and other low-carbon technologies become cheaper and more efficient, their use has surged. Last year the number of electric cars sold around the world passed 1m. In some sunny and blustery places renewable power now costs less than coal.

Public concern is picking up. A poll last year of 38 countries found that 61% of people see climate change as a big threat; only the terrorists of Islamic State inspired more fear. In the West campaigning investors talk of divesting from companies that make their living from coal and oil. Despite President Donald Trump's decision to yank America out of the Paris deal, many American cities and states have reaffirmed their commitment to it. Even some of the sceptic-in-chief's fellow Republicans appear less averse to tackling the problem (see United States section). In smog-shrouded China and India, citizens choking on fumes are prompting governments to rethink plans to rely heavily on coal to electrify their countries.

Optimists say that decarbonisation is within reach. Yet, even allowing for the familiar complexities of agreeing on and enforcing global targets, it is proving extraordinarily difficult.

One reason is soaring energy demand, especially in devel-

oping Asia. In 2006-16, as Asia's emerging economies forged ahead, their energy consumption rose by 40%. The use of coal, easily the dirtiest fossil fuel, grew at an annual rate of 3.1%. Use of cleaner natural gas grew by 5.2% and of oil by 2.9%. Fossil fuels are easier to hook up to today's grids than renewables that depend on the sun shining and the wind blowing. Even as green fund managers threaten to pull back from oil companies, state-owned behemoths in the Middle East and Russia see Asian demand as a compelling reason to invest.

The second reason is economic and political inertia. The more fossil fuels a country consumes, the harder it is to wean itself off them. Powerful lobbies, and the voters who back them, entrench coal in the energy mix. Reshaping existing ways of doing things can take years. In 2017 Britain enjoyed its first coal-free day since igniting the Industrial Revolution in the 1800s. Coal generates not merely 80% of India's electricity, but also underpins the economies of some of its poorest states (see Briefing). Panjandrums in Delhi are not keen to countenance the end of coal, lest that cripple the banking system, which lent it too much money, and the railways, which depend on it.

Last is the technical challenge of stripping carbon out of industries beyond power generation. Steel, cement, farming, transport and other forms of economic activity account for over half of global carbon emissions. They are technically harder to clean up than power generation and are protected by vested industrial interests. Successes can turn out to be illusory. Because China's 1m-plus electric cars draw their oomph from an electricity grid that draws two-thirds of its power from coal, they produce more carbon dioxide than some fuel-efficient petrol-driven models. Meanwhile, scrubbing CO₂ from the atmosphere, which climate models imply is needed on a vast scale to meet the Paris target, attracts even less attention.

The world is not short of ideas to realise the Paris goal. Around 70 countries or regions, responsible for one-fifth of all emissions, now price carbon. Technologists beaver away on sturdier grids, zero-carbon steel, even carbon-negative cement, whose production absorbs more CO₂ than it releases. All these efforts and more—including research into “solar geoengineering” to reflect sunlight back into space—should be redoubled.

Blood, sweat and geoengineers

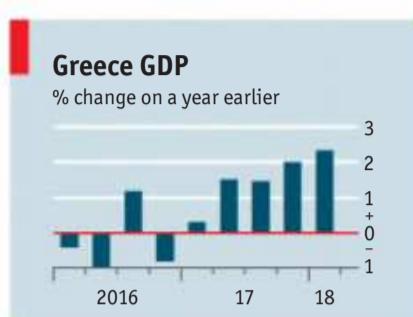
Yet none of these fixes will come to much unless climate listlessness is tackled head on. Western countries grew wealthy on a carbon-heavy diet of industrial development. They must honour their commitment in the Paris agreement to help poorer places both adapt to a warmer Earth and also abate future emissions without sacrificing the growth needed to leave poverty behind.

Averting climate change will come at a short-term financial cost—although the shift from carbon may eventually enrich the economy, as the move to carbon-burning cars, lorries and electricity did in the 20th century. Politicians have an essential role to play in making the case for reform and in ensuring that the most vulnerable do not bear the brunt of the change. Perhaps global warming will help them fire up the collective will. Sadly, the world looks poised to get a lot hotter first. ■

Euro-zone austerity

The Greece-y pole

Emerging from crisis, Greece still has a daunting amount to do



the country will emerge from its final bail-out programme with official creditors. The three bail-outs cost Greece €300bn (\$350bn)—without counting interest payments or the effects of harsh austerity. Before wildfires last week plunged the country into mourning, the left-wing government of Alexis Tsipras had hoped to mark the occasion with street parties.

Greece's recent progress is welcome, but the country still faces immense difficulties. Although euro-zone mandarins will continue their inspections until most of the debts are repaid, the onus will henceforth be on the Greeks to solve their own problems. That has consistently proved beyond them, even when the crisis was at its deepest.

Never waste a post-crisis

The marks of the crisis and the subsequent austerity are deeply etched. Output, in real terms, is a quarter below its peak in 2007 and investment is down by two-thirds. The share of people living in poverty has doubled. One in five of the workforce is unemployed. Many of the most go-ahead have emigrated.

Although debt remains a crippling 180% of GDP, Greece should once again be able to raise money, thanks to an agreement with creditors that extends the maturity of some loans by ten years. But in return, the country has pledged to achieve a primary surplus, ie, excluding interest payments, of 3.5% of GDP every year until 2022 and 2.2% until 2060—an almost impossible task. If growth slows, interest rates rise or budget tar-

gets are missed, private-sector lenders, on whom Greece will rely, may question the sustainability of its public finances.

Such fragility only adds to the need to improve the economy's growth potential. Greece's productivity fell by 0.8% last year, even as the euro-zone average rose by 0.9%.

Structural reform is hard in any country, but Greece's politicians will have to change their ways after years of inaction and delay. If they set their mind to it, they have a huge opportunity. Few records exist of who owns land, even though a comprehensive registry has been in the works for decades. Without one, selling land or anything on it can be delayed for years, hindering investment. Bureaucrats and judges slow business further. The World Bank reckons that resolving a contract dispute in court takes 1,580 days. Businesses need licences to expand production, but the grounds for winning approval are often vague. Privatisation and efforts to boost competition have been half-hearted.

Tax collection is better than in the worst days of cronyism and corruption. But the base is too small, and high corporate- and income-tax rates deter spending and investment. Those who can, evade. Plans to broaden the tax base in 2020 are reasonable, but demand rare political courage. The government's proposal to raise the minimum wage is sensible, as long as increases do not outstrip productivity gains.

Official creditors may think they are safe. But the crisis was an indictment of the euro zone as well as Greece. The euro zone was so anxious to avoid rewarding the country for its profligacy before the crisis that it shunned official debt relief and realistic fiscal targets, the solutions most likely to get Greece back on its feet. In the depths of the crisis, the currency bloc risked being brought down by a member state that made up less than 2% of its overall GDP. A crunch in Italy, a much bigger economy that also has a large public-debt burden, would be a severe test—and, going by Greece's misery, a fatal one. ■

The Horn of Africa

How to make Eritrea less horrible

Peace gives the North Korea of Africa a chance to open up



Eritrea's new prime minister, Abiy Ahmed, and Eritrea's dictator, Isaias Afwerki, have signed a peace deal and reopened telephone and air links between their two countries. On July 30th Eritrea agreed to restore diplomatic relations with Somalia; there is talk of mending ties with neighbouring Djibouti, too.

It is too soon to say what all this means, but the omens in Ethiopia are good. As well as pursuing peace, its new leader has lifted a state of emergency, welcomed back exiled dissidents, freed thousands of political prisoners and vowed to privatise lumbering state-owned enterprises. The big question-mark hangs over Eritrea, the North Korea of Africa.

The Eritrean regime hates being likened to North Korea's—and it does not have nuclear weapons—but the comparison is unavoidable. Eritrea split from Ethiopia in 1993, after a 30-year guerrilla struggle. The two countries fought a pointless war in 1998-2000 over a desolate border town; perhaps 70,000 people died. Eritrea is ruled by a despot-for-life whose critics wind up dead or sweating in a gulag of shipping crates in the desert. ►



We create chemistry

Now you have more ways to grow with BASF

We're investing in agriculture for the long term

We all rely on agriculture to live. That's why BASF is investing in the future of farming. Our recent acquisition of new businesses, products and research lines gives us a broad portfolio across seeds and traits, chemical and biological crop protection, digital tools, and soil and plant health. With our experienced and expanding team, we connect innovative thinking with practical action to provide value for farmers and partners around the world. We're growing to help our customers grow better.

Learn more at basf.com/grow-with-us

► The regime is isolated, mysterious, paranoid, has a history of stirring up trouble in the region and has always used the threat of war as a pretext for oppressing its people. National service is compulsory and indefinite—many Eritreans serve more than 20 years either bearing arms or digging ditches for a pittance. Those who try to flee the country risk being shot. Many bribe border guards to look the other way; hence the large number of Eritreans who have sought asylum in Europe. Isolation, or “self-reliance” as the regime calls it, has kept Eritrea wretchedly poor. Only nine countries score worse on the UN’s human-development index.

Could things be about to improve? As we report from inside Eritrea (see Middle East and Africa section), the mood is suddenly unsettled. Peace, if it sticks, would remove the regime’s main excuse for its atrocious behaviour. If Ethiopia is no longer a threat, why should Eritreans spend decades doing national service? If Eritrea is no longer on a war footing, why does it need a military strongman to keep it safe? Strange to recall, before it seized power a quarter-century ago, the ruling party promised Eritreans multiparty democracy with all the trimmings, including freedom of speech and religion.

It would be naive after all this time to expect Mr Isaias suddenly to honour that promise. But he could take other steps to make Eritrea less closed and miserable. Most important, he must not go back to war. Progress is virtually impossible without peace. He should also open up to trade, investment and people. Ethiopia is a landlocked giant. Eritrea can give it access

to the sea. The war and its aftermath stopped Ethiopian imports and exports from flowing through Eritrean ports, depriving both countries of a fortune. Two-thirds of Eritrean exports used to go to Ethiopia.

And he should abolish all non-military conscription. If the regime cannot bring itself to get rid of military service too it should at least impose a time limit. This would remove the single biggest grievance causing Eritreans to flee their homeland. Some of the dynamic diaspora might even return to help rebuild their country. Ending non-military national service would also remove a huge obstacle to foreign investment. Reputable firms shun Eritrea partly because any venture is likely to involve local partners who use conscripts—ie, forced labour. Without this worry, they might help spruce up Eritrea’s crumbling harbours, woeful telecoms and barely exploited tourist potential. Unshackled from semi-slavery, Eritreans would be free to find or create jobs they actually want to do.

Fleeing from slavery across the Red Sea

It is too early to abandon the presumption that Eritrean refugees have a well-founded fear of persecution. Eritrea will not suddenly become a normal country. But by easing its state-imposed seclusion, it could become a less poor one. Outsiders should encourage that. As and when the regime opens up, the West should begin to engage with it. And some day, perhaps, Eritreans will start to enjoy the freedoms they were promised during their tragic revolution. ■

Brexit

No ordinary deal

Britain’s dangerous bluff betrays a misunderstanding of its negotiation with Brussels



IN MOST negotiations, the maxim that “no deal is better than a bad deal” makes perfect sense. If you are buying a car, you must be ready to walk away or the seller has you over a barrel. The way to drive a hard bargain is to persuade him that he must offer you a good deal or there will be no deal at all.

Theresa May has made this commonsense principle the foundation of her talks with Brussels over Britain’s exit from the European Union. “No deal for Britain is better than a bad deal for Britain,” she said in January last year, setting out her red lines. With less than eight months until Britain is due to leave the EU, and only about four months left to reach an agreement on the terms of its exit, her government is still stressing its readiness to depart with no deal in place.

The trouble is that Brexit is nothing like buying a car. In most negotiations “no deal” means sticking to the status quo. If you are not prepared to pay the asking price, you can walk away none the worse and try somewhere else. The Brexit talks are different. If no deal is reached Britain will not maintain the status quo of its EU membership, but find its links to the continent abruptly and acrimoniously broken off. The metaphor is not buying a car, it is buying a parachute—having already leapt out of the aeroplane. “Walking away” would land Britain in a situation so calamitous that it should not even be on the table.

A no-deal outcome would be bad for the EU, too, particularly Ireland, whose small, open economy is closely linked to Britain’s. But Britain would be hurt most by a hard landing. Trading with the EU on the terms of the World Trade Organisation, which would raise both tariffs and regulatory barriers, would reduce Britain’s GDP by 4% within five to ten years, according to the IMF. The EU’s GDP would fall by about 1.5%. Worse still—again, for everyone, but chiefly for Britain—would be the turmoil from leaving without agreements in place over everything from airline safety to the transfer of radioactive material. The supply of such essentials as food and medicine could be disrupted, too (see Britain section).

A hard landing

For this reason, the EU has never taken seriously Mrs May’s claim that Britain is ready to walk away from the negotiating table. It sees her threat as a bluff—and it is right, judging by the lack of preparation in Britain for a no-deal outcome. Even with extensive (and expensive) planning, leaving the EU without a deal would have been difficult. As things stand, almost no work has been done to prepare for such an eventuality. Lately, Britain has taken to outlining desperate-sounding plans to stockpile medicine and set up electricity generators. Chaos would be hard to avoid.

Yet, although the EU’s negotiators in Brussels do not buy it, Mrs May’s slogan that “no deal is better than a bad deal” has struck a chord with the voting public. As the talks have dragged ►

Fake news is not our friend.

We're committed to reducing its spread; so we're working with more fact-checkers globally, improving our technology, and giving you background information on the articles in your News Feed.

Find out more: fb.me/fbchangesUK

facebook

►on and the EU has extracted concessions, such as a promise by Britain to pay a large exit bill, the desire to walk away has only grown. Polls show that nearly twice as many Britons would leave the EU with no deal as would support a compromise along the lines Mrs May proposed last month. By this logic, her eventual settlement with Brussels, if she reaches one, will look even more like a bad deal because Britain will have to give more ground. Many voters will thus quote the prime minister's own slogan back to her, and argue to crash out.

The government is trapped by its own rhetoric. The louder it shouts in Brussels that it is ready for no deal, the more it emboldens voters and Brexiteer MPs to call for just such an outcome. Yet the more the government argues at home that Brexiteers should avoid the miseries of crashing out by embracing Mrs May's compromise, the more it convinces Brussels that, except as a disastrous accident, "no deal" is not credible.

It is time to drop the pretence. Leaving without a deal was never a wise option. The government ought to have spent the past two years steering the public through the painful trade-offs of leaving the EU. As we have argued, Britain's interests are best served by a "soft Brexit" that preserves markets and security. Instead, big-mouth ministers have kept expectations sky high, claiming that the deal "will be one of the easiest in human history" and that "there will be no downside to Brexit".

Mrs May has belatedly come to accept the need for compromise—to the fury of a small coterie of hardline Brexiteers who would sooner crash out of Europe, kamikaze-style, than maintain any kind of obligation to the EU. The prime minister's continued claims that Britain can simply walk away play into their hands. She must cease such talk. With a bit more compromise on both sides, a deal is reachable. Britain must seize that parachute before it is too late. ■

Philosophy brief

The brains trust

This week we begin a series on liberalism's greatest thinkers. Their ideas still matter



LIBERALS are in the market for new ideas. For roughly 30 years, they ran the world. Starting in the early 1980s, free markets, globalisation and individual freedoms flourished. Liberalism—in this broad classical sense, rather than the narrow American left-of-centre one—saw off communism as well as social conservatism. Then, in the crash of 2008, it all fell apart.

As this week's Books and Arts section explains, the financial crisis unleashed economic austerity and the rise of populism. Liberals, in charge of government and the banks, got the blame. They have been paralysed ever since.

One source of new ideas is debate. That is the aim of our Open Future project, marking *The Economist's* 175th anniversary with essays, debates, reports, podcasts and films. Another source is the past. That is the job of our philosophy briefs, which start this week with John Stuart Mill (pictured). The ideas of old liberal thinkers still hold lessons.

Run of the Mill

What emerges? Liberalism is pragmatic. John Maynard Keynes, a lifelong champion of the liberal ethos, advocated government intervention during recessions to avoid the social ruin of economic collapse. The welfare state was not a socialist creation, as both right and left assume, but a liberal one—so that individuals are free to achieve their full potential.

Thanks to this pragmatism, liberalism is a broad church. John Rawls was a progressive American academic, his counterpart Robert Nozick a libertarian. Keynes believed in intervention; Friedrich Hayek and his fellow mid-20th-century Austrian, Joseph Schumpeter, insisted on the freest of free markets. (We urge readers who think our choice of dead white men too narrow to add their favourite liberal thinkers to our Literature of Liberalism—economist.com/liberalthinkers.)

And liberals think concentrations of power pose a threat. If anyone should have known that intellectual dominance

would lead to disaster, as it did in 2008, liberals should have. Mill thought that no argument was ever settled definitively. Alexis de Tocqueville, the great chronicler of liberal America, cherished the diversity of local groups as a guard against state power. Yet the liberals in charge before the financial crisis were convinced that they had all the answers. In protecting what they had, they stopped thinking.

Were the great minds still humming today, three things would trouble them. The first is the steady erosion of truth by "fake news", Twitter storms and viral postings. Liberalism thrives on conflict. But for argument to be constructive, it must be founded on good faith and reason. Today both sides talk past each other. The idea has become common, on both right and left, that when people put forward an argument you cannot separate what they say from who they are.

The second worry is the erosion of individual freedom. Mill popularised the term "the tyranny of the majority". He supported democracy, including women's suffrage, but warned how, as now in Turkey and the Philippines, it could turn into mob rule. Separately, Isaiah Berlin, an Oxford academic, would have seen that "no platforming" in order to protect minority groups comes at the cost of individual speech.

Last, the great thinkers would have lamented liberals' faltering faith in progress. New technology and open markets were supposed to spread enlightenment and prosperity, but many people no longer expect to live better than their parents did. As democracies drift towards xenophobic nationalism, universal values are in retreat. And for the first time since the heyday of the Soviet Union, liberalism faces the challenge of a powerful alternative, in the form of Chinese state-capitalism.

Today's liberals like to think that they are grappling with uniquely difficult issues. They should consider their forerunners. Mill and Tocqueville had to make sense of revolution and war. Keynes, Berlin, Karl Popper and the Austrians confronted the seductive evils of totalitarianism. Today's challenges are real. But far from shrinking from the task, the liberal thinkers of yesteryear would have rolled up their sleeves and got down to making the world a better place. ■

Let's do it again



You are right that, if the British Parliament cannot agree on what sort of Brexit it wants, the people must be asked what they want, including whether they want to leave the European Union at all ("The case for a second referendum", July 21st). But you also argue that it would be better if MPs made up their own minds and spared the people the trouble of voting again on the matter. This is wrong.

No form of Brexit will be good. We will either damage our prosperity, by reducing our ties with our largest market; or we will damage our power, by following EU rules without a vote on them; or we will damage both (the prime minister's latest proposal). The only way of avoiding damage to both our prosperity and our power is to cancel Brexit. But Parliament should not do this without first asking the people. So even if MPs could agree what is the least bad form of Brexit, they should still ask the people if they want it.

In the referendum two years ago, the public was asked to choose between the reality of "in" and Boris Johnson's cake-and-eat-it fantasy of "out". Once Theresa May has finished her negotiations, the people have the right to choose between the reality of "in" and the reality of "out".

HUGO DIXON
Chair
InFacts
London

The preparation and then campaigning for a second referendum would create increasing indecision and insecurity for industries, a more calamitous problem than any specific

result, with perilous repercussions for jobs and investment. You asserted that the Brexit alternatives could be "costed and debated" in a second vote. Yet unambiguous and comprehensive alternatives won't really be available, and how much will the public actually know about them? A referendum held before Britain leaves the EU would not be held on a clear strategy for future relations with the EU.

What is most perturbing is the perils another referendum could impose upon our democracy. The message would be that, even after the country reached a definitive outcome in the first referendum subsequent to a long campaign, with a record turnout, Parliament was not qualified or efficient enough to execute it. To put it bluntly, the government cannot honour the desire of its people. The long-established and respected faith we have in our democratic processes would be brutally eradicated. Britain would be deeply divided: politically, socially and economically.

It is imperative that we ensure the upmost stability and unity now by accepting the voters' verdict and work together to implement it as best we can.

KARDO BECK
London

If you are going to fail, fail hard and fast. This allows you to dust yourself off, learn from your mistake and move on. A second referendum would further dilute responsibility for Brexit, letting the Eurosceptics off the hook for the misinformation they have peddled. And it would lead to a soft Brexit. That would make it all too easy for the Brexit extremists to say that it failed because it was not a true Brexit, much as Marxists attribute the demise of a communist regime to it not being true communism. A hard Brexit would leave Britain sadder but wiser. Sometimes a heart attack is the only way to shock a person into changing a profoundly unhealthy lifestyle.

ANDOR ADMIRAL
The Hague

It's good to talk

I do not share *The Economist's* dim view of the American and Russian presidents' recent meeting ("Humiliation in Helsinki", July 21st). In particular, the allegation that President Donald Trump failed to stand up for America in the wake of the election-meddling revelations. What was he supposed to do, call Vladimir Putin a liar to his face in public? How would that foster future co-operation? Mr Trump is trying to build a relationship. If you exhibit trust in someone, they are more likely to want to honour it than not. Children are a good example. Whether you truly believe the trust is warranted is irrelevant; time will tell in any event.

Neither do I buy the parallels you draw between the Helsinki meeting and Mr Trump's more critical rhetoric towards the Europeans and Britain. True friends tell it like it is. To be able to do so is a mark of the strength of a friendship, not the reverse.

LES PEARCE
Cranleigh, Surrey

W.H. Auden once said poetry makes nothing happen. But Helsinki perhaps proves him wrong:

And how reliable can any truth
be that is got
By observing oneself and then
just inserting a Not?

JOHN GOODMAN
Auckland, New Zealand

Spain's civil war

The opening paragraph of "Disturbing Franco's ghost" (July 21st) is biased. The Valley of the Fallen was built to remember the deaths on both sides in the Spanish civil war and to serve as a reminder for future generations. It was not built by forced labour. Inmates, well fed and paid, voluntarily helped its construction, which was mainly done by free workers. Last, but not least, you call my grand uncle, José Antonio Primo de Rivera, a fascist. He was a successful lawyer and politician who was killed in jail

after an unfair trial in 1936. In his testament he did not want more blood to be spilled in wars between Spaniards. He was against the war and against the military. He was killed when he was 33, just three years after the foundation of his party. He was a very good friend of Federico García Lorca. His last handwritten manuscripts are summarised in a book called "The Papers of José Antonio". Please read it and tell me if he was a fascist.

PELAYO PRIMO DE RIVERA
Madrid

Depicting war

Movies about the cold war made by Hollywood and the inseparable British film industry were not quite as Manichean as you suggest ("The thaw", June 30th). If you concentrate on "quality" films, and strip away tongue-in-cheek (Bond), propaganda ("Green Berets"), crass ("Rambo"), and allegory ("The Alamo"), you find a more-balanced judgment. I suggest a reading of "Reds", "Dr Zhivago", "Full Metal Jacket", "Platoon", "The Bridges at Toko-Ri", "Pork Chop Hill", "Judgment at Nuremberg", "Dr Strangelove" and many others to counter your view. Hollywood and the British film industry at their best have been more imaginative than you think, despite being hindered by the normal degree of nationalistic myopia.

SIMON STANDER
Moncofa, Spain

Divisibility is a trap

Schumpeter's final comment on Foucault reminded me of an old joke (June 23rd). There are two kinds of people in this world: those who like to divide the world into two kinds of people and those who don't.

RICHARD WEXELBLAT
West Brandywine, Pennsylvania

Executive Focus



Applications invited for the next President of the European Research Council

An independent search committee for the selection of the future President of the European Research Council (ERC), appointed by the European Research, Science and Innovation Commissioner Carlos Moedas, is inviting applications for the prestigious post of the President of the European Research Council (ERC). The committee, chaired by Mario Monti, President of Bocconi University and former Prime Minister of Italy, will submit a shortlist of potential candidates to the European Commission.

The ERC President should be an internationally renowned and respected scientist. He/she will chair the ERC Scientific Council and will be the voice and public face of the ERC. She/he is expected to be a prominent advocate of frontier research and an ambassador of European science within and beyond Europe, with the aim of strengthening further the ERC's performance and prestige and Europe's science base in frontier research.

The new President of the ERC is due to take office from 1 January 2020. The term of office is limited to four years, renewable once. No age limit applies. Applicants must be nationals of an EU Member State. The deadline for applications is 1 October 2018.

For more information, including on how to apply, please see the Statement by the Search Committee on the process and requirements here: ec.europa.eu/research/erc-president



European Research Council
Established by the European Commission



United Nations
careers

Assistant Secretary-General (ASG), Office of Internal Oversight Services

Are you a senior executive with substantive knowledge of governance, risk management and internal control systems with ability to guide and monitor timely and effective implementation of risk-based internal oversight activities?

The United Nations is seeking an Assistant Secretary-General for Internal Oversight Services.

The Office assists the Secretary-General in fulfilling his oversight responsibilities in respect of the resources and staff of the Organization through the provision of audit, investigation, inspection and evaluation services. The Office aims to be an agent of change that promotes responsible administration of resources, a culture of accountability and transparency and improved programme performance.

The Assistant Secretary-General for Internal Oversight Services is accountable to the Under-Secretary-General for Internal Oversight Services.

The ideal candidate will possess substantial experience in providing leadership, direction and advice on matters that relate to internal oversight disciplines.

Applications should include a curriculum vitae and be sent to oisasg.recruitment@un.org by 27 August 2018.

Applications from women are strongly encouraged.

For more information about this position, go to: www.un.org/sg/vacancies



**YOU NEED A NEW CHALLENGE.
YOU HAVE ENJOYED ONE CAREER.
YOU WANT MORE MEANING IN YOUR LIFE. NOW TEACH.**

NOW TEACH was set up by **FT journalist Lucy Kellaway** to support people who have already had one successful career to retrain as teachers, re-deploying their skills in the classroom.

**We're recruiting across London and Hastings for September 2018,
visit www.nowteach.org.uk to apply now.**

NOW TEACH

Now Teach is incubated by Ark UK Programmes, a registered charity in England and Wales, registration number 1137932, and company limited by guarantee, company number 05932797 65 Kingsway, London, WC2B 6TD.



BIS
Where perspectives meet

Experienced Economists

Basel, Switzerland

The BIS has a number of openings for experienced economists in its Monetary and Economic Department (MED). The positions are in a variety of units, including financial markets, monetary policy and in the secretariat of the Committee on the Global Financial System (CGFS).

You will define and carry out policy analysis of global financial and economic issues, and undertake research relating to financial stability and monetary policy for BIS publications and professional journals.

You have a PhD and experience gained at a central bank, an international policy institution, or in academia. You combine a strong research background with solid experience in applying economic analysis to real-world situations. You have excellent drafting and communications skills in English.

We offer the opportunity to work at the hub for central bank cooperation, an intellectually stimulating international setting alongside colleagues from more than 60 countries, and competitive employment conditions.

To find out more, visit www.bis.org/careers

Deadline for applications: **Sunday, 26 August 2018**

Promoting global monetary and financial stability



BIS
Where perspectives meet

Head of Monetary Policy

Basel, Switzerland

The BIS invites applications for a key appointment within its Monetary and Economic Department (MED). As the head of the department's Monetary Policy unit, you will lead a small team of economists specialised in this field and help to define and execute policy-relevant research.

In addition to conducting high-quality research and policy analysis in the areas of monetary policy and exchange rate issues, you will represent the BIS at official meetings and seminars, and develop contacts in central bank, academic and financial market circles.

We look forward to meeting candidates with a PhD in economics or finance and relevant experience gained in a central bank or international financial institution, including active involvement in monetary policy formulation or implementation. Candidates will have a solid research and publication record.

In return, we offer the opportunity to work at the hub for central bank cooperation, an intellectually stimulating international setting alongside colleagues from more than 60 countries, and competitive employment conditions.

To find out more, visit www.bis.org/careers

Deadline for applications: **Sunday, 26 August 2018**

Promoting global monetary and financial stability



Recruitment of a Governor for the Central Bank of Somalia

Somalia is emerging from conflict and rebuilding its economy, including its key economic institutions. The position of Governor of the Central Bank of Somalia (CBS) will fall vacant on November 1, 2018.

The new Governor will lead the CBS through major ongoing reforms, including the issuance of a new national currency, rebuilding the CBS's institutional capacity, developing monetary instruments, and implementing the CBS's mandate, which includes the development of financial intermediation and regulation of the financial system.

The Governor is the chief executive officer of the CBS and is responsible for its management under the general direction of the Board of Directors. The Governor also serves as the Chair of the Board, and is the principal representative of the CBS in its relations with the Federal Government of Somalia, other public entities and bodies and international financial institutions.

The successful candidate must hold a university degree in monetary, financial, banking, accounting, legal or economic matters and have at least twelve years' experience in the field of economics, banking, finance or law, preferably internationally. Strong preference will be given to those with international banking experience.

He/she will be a strong communicator, have good interpersonal skills, and be able to demonstrate strong leadership, management and policy skills. The successful candidate will have held a senior managerial position in a Central Bank, Government agency, private financial institution or an international organization. He/she must be fully conversant with the functions and operations of a Central Bank. He/she must also be fully conversant with monetary policy and issues relating to financial sector regulation and development.

The successful candidate will be a person of undisputed integrity and standing. He/she shall be appointed by the President upon the proposal of the Council of Ministers and shall hold office for a period of four years, with the possibility of a reappointment for one more term.

Remuneration will be commensurate with the qualification and experience of the candidate selected and will be competitive.

Applications must be in English and should include a covering letter, CV and three written references.
Applications should be sent electronically to: cbs.governor.recruitment@gmail.com

The closing date for all applications is August 28th, 2018. Short-listed candidates will be contacted for interview.



The black hole of coal

HAZARIBAGH, JHARKHAND STATE

India shows how hard it is to move beyond fossil fuels towards a renewable future

DARKNESS is falling as coal starts its long, lawless journey from the pit. The first signs are the cycle-pushing foot-soldiers, such as Ravi Kumar, a 26-year-old whose yellow shirt and grey turban are as coal-smudged as his face and hands. Using his bike like a wheelbarrow, he strains uphill with his back bent, then coasts down with one sandalled foot on the pedal, the other scuffing the tarmac as a brake. The bike is laden with half-a-dozen sacks of coal, pilfered from a nearby mine.

There are hundreds of other small-time thieves like him, he says nervously, supplementing their income on a Sunday evening by fanning out to sell bike-loads of coal to owners of iron works and brick kilns, and tea brewers. Coal-fed braziers and stoves flicker by the side of the road, black smoke pouring out. An Indian Dickens would be scribbling furiously.

Then there are the coal lorries—the heavy artillery. They gather at the edge of a nearby village, 140 of them squeezed along the roadside, ready to trundle off for the nightlong journey to Hazaribagh, the biggest city in this part of Jharkhand state.

Across eastern India, which sits on the country's largest coal reserves, this ragtag army sets out at dusk to feed the furnaces, fill the railway wagons, and fuel the power stations that get India's economy moving.

It is the same across much of Asia, where coal consumption grew by 3.1% a year from 2006 to 2016, accounting for almost three-quarters of the world's demand for the most polluting fossil fuel.

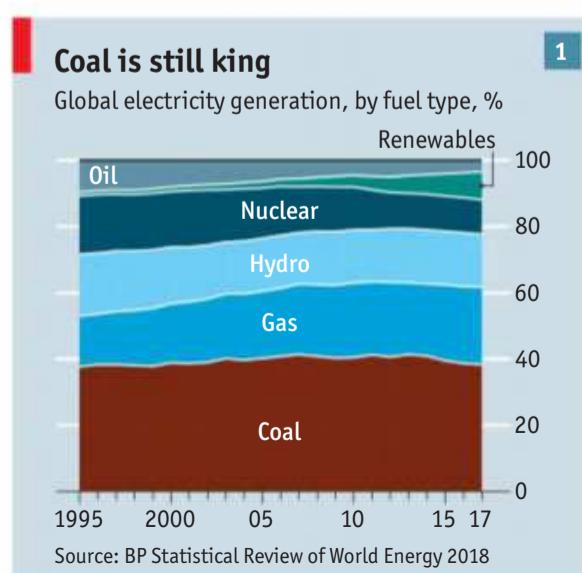
Last year, just as Western banks and global development agencies were shunning coal projects on environmental grounds, India, the world's second-biggest burner after China, consumed an additional 27m tonnes, a rise of 4.8%. That led to the first increase in global coal consumption in four years, says BP, an oil company. Demand in China also picked up slightly, and there were big increases from Bangladesh and

Pakistan to the Philippines and South Korea. Such is the supply and demand that prices for thermal coal, the type used for generating electricity, are at their highest since 2012, and have more than doubled in the past two years.

The environmental implications of this resurgence are deeply troubling. Asia accounts for more than half of the 9m pollution-related fatalities recorded in 2015, according to a recent study for the *Lancet*, a medical journal. India's 2.5m deaths is by far the biggest share. Coal is the main culprit. It is also a wrecker of the climate. Coal's comeback helps explain why 2017 was the first year in four that global emissions of carbon dioxide have risen, thwarting the planet-wide effort, accelerated by the Paris summit in 2015, to control climate change. BP notes that coal's share of global electricity generation—by far the largest source at 38%—has not shrunk in over 20 years, despite the rise of gas and renewable energy (see chart 1).

No country is likely to contribute more to the growth in energy demand over the next two decades than India, says the International Energy Agency (IEA), a global forecaster. When India submitted plans for climate-change actions at the Paris summit, it predicted that its electricity demand would triple between 2012 and 2030. If coal meets much of the growing appetite for power, as the IEA expects it will, no country will contribute more to the rise in carbon emissions.

India has plans for alternative means of generating electricity. Even before the Paris summit, Narendra Modi, the prime minister, aimed to install 175 gigawatts (GW) of renewable-energy capacity by 2022, a vast



► increase from today. That has now risen to 227GW. In the meantime, prices of wind and solar power have tumbled. Recent auctions have led to a 50% drop in the cost of solar power in the past two years, to about three rupees (\$0.05) per kilowatt hour, about the same as wind. This can make both sources cheaper than building new coal-fired capacity. An excise tax on production and imports makes coal ever less attractive. After a massive spree of building coal-fired power plants in recent years, investment slumped last year, while that in alternatives surged (see chart 2).

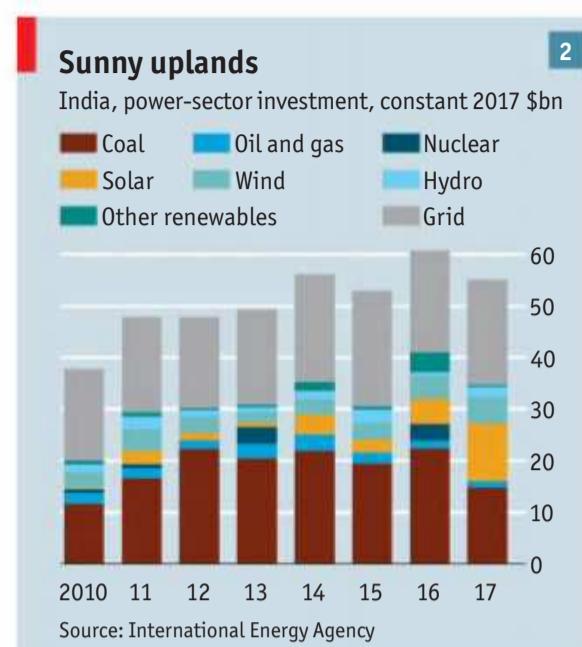
It is one thing to recognise the imperative for reducing coal in a country's energy mix. It is another to consider the ramifications of shifting from a cheap source of fuel native to India. A swing through coal country provides a sobering illustration of how hard it is to wean a country off fossil fuels. The first thing you notice, however obvious, is that coal is grimy. It cakes roadsides and blackens rivers and lungs with soot.

Although coal is horribly filthy, India is utterly dependent on it. It generates more than three-quarters of the country's electricity. Mining it and turning it into power accounts for a tenth of India's industrial production. It provides jobs as well as power. Coal India, a state-owned coal miner that is the world's largest, employs, at last count, 370,000 people, and there are up to 500,000 working in the coal industry at large. Far from reining in production, Coal India plans to increase it, from 560m tonnes in 2017 to 1bn tonnes by 2020. The government's target for national production is 1.3bn-1.9bn tonnes by 2030.

Rohit Chandra, a political scientist who is writing a book on India's coal industry, estimates that 10m-15m people benefit indirectly from coal, through social programmes near mines. He notes that, in eastern states, Coal India and its subsidiaries have provided roads, homes and water when local governments have been negligent. It is also a big source of revenue for state governments in poor areas.

The mighty railways, which employ over 1.5m, also depend on coal. Because the producing states are in the east, far from the biggest cities, coal accounts for half the freight carried on the network.

To illustrate coal's stubborn resilience, consider the Patratu power station in Jharkhand. The building feels all but abandoned. Sunflowers grow amid the rusted struts of its substation. Buffalo sometimes



wander into the vast turbine hall, littered with boilers and other equipment. Some boilers are broken open so that you can peer inside. The centrepiece is its control room, built by Soviet engineers in 1962, still furnished with its original knobs and dials. Clambering through the mess gives a perverse thrill.

The plant chugged on for more than half a century, producing its final trickles of power last year. But instead of facing extinction, as many environmentalists would hope, Patratu is about to be resurrected by NTPC, the state-owned power producer, and the Jharkhand government. In May Mr Modi staged a televised event in which he unveiled a new foundation stone. The first phase of renewal will be a 2.4GW power station, costing 186bn rupees. A second will add 1.6GW.

Back from the brink

It is not a one-off. For all Mr Modi's ambitions for renewable energy, Patratu is part of a projected 48GW of coal-fired capacity under construction or planned between 2017 and 2022. Although it is a sharp slowdown compared with recent years, it goes far beyond replacing 22.7GW that is due to be retired and is not far short of the 69GW of renewable energy so far installed in India. For comparison it is almost as much as the total thermal-power capacity of South Africa, a coal-burning country.

Patratu, and the coal fields that supply it, provide a glimpse of the interdependence between coal, power and the state that took root with the birth of modern India. After independence in 1947, the Indian government wrote an electricity law to of-

fer power to its newly free citizens. At first it put the formerly British-owned mines into private Indian hands but, after it became known as "slaughter mining" because of an atrocious safety record, the industry was nationalised in 1973. Power generation was kept mainly in state hands. During the cold war, the Soviet Union backed the development of energy infrastructure, which helped entrench the state-owned model and produced power stations like Patratu.

Three factors help explain why coal is likely to remain ingrained under the fingernails of the nation—politics, economics, and the complications of generating electricity. First politics. Coal chokes India politically, especially in states where it is mined. Though Jharkhand sits on 40% of India's mineral resources, it is among the five poorest states. A Maoist insurrection simmers on the edge of coal country, partly because the benefits have been so unevenly shared between those who exploit coal and those living on the land.

The "resource curse" is an argument for weaning the economy off coal, yet it works both ways. Coal-related graft infects politics, making change harder. "Gangs of Wasseypur", a Bollywood blockbuster of 2012, is a dramatisation of the mafia that for decades has hijacked Jharkhand's coal industry, for personal and political gain. Ramesh Sharan, vice-chancellor of the Vinoba Bhave University of Hazaribagh, says that about a third of coal output in Jharkhand is mined illegally, lining the pockets of businessmen, politicians and bureaucrats, especially at election time. "Everybody's a shareholder in the coal mafia," he says.

Mr Chandra describes coal as "deeply embedded and enmeshed" with the state. Efforts to reduce the government's role in the industry have had perverse results. For instance, in the 1990s the steel industry and other consumers were permitted to mine coal for their own use, which led to an infamous scandal, called "Coalgate". In 2014 the Supreme Court annulled mining contracts awarded between 1993 and 2010, after it became clear that they had been allocated in an arbitrary way at throwaway prices, mostly as a result of crony capitalism involving politically aligned firms, state-owned banks and local bureaucrats. It cost the government the equivalent of \$33bn. So embedded are such interests, which have largely gone unchallenged, that a swift transition from coal would meet "serious political opposition" in parts of India, says Mr Chandra.

The second factor behind coal's persistence is economics. The coal-fired power industry is too big to fail. It is a huge source of financial vulnerability because it has grown too quickly in recent years, on a river of money borrowed from state-owned banks. During the past decade, private firms built a massive 84GW of coal-fired generating capacity, more than a third of

A burning issue

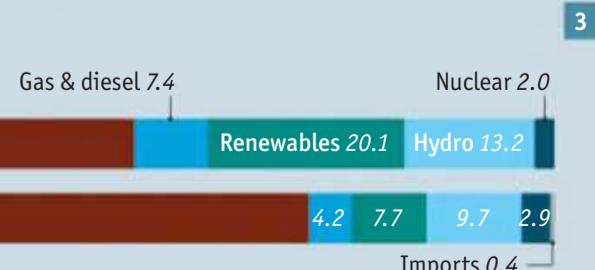
India, electricity by fuel type, 2017/18, % of total

Installed capacity

Coal 57.3

Used for generation

75.1



► India's total, on expectations of a surge in electricity demand.

That increase has so far failed to live up to expectations, in part because of problems with the national grid that continues to leave large swathes of the population without power for much of the day. As a result, coal-fired plants have suddenly found themselves awash with unwanted capacity. Revenues have plummeted. The average load factor—the proportion of its nominal capacity a plant generates—was 60% in 2016-17, down from 70% in 2012-13.

Unplugged

This has left parts of the industry, as well as many of the banks that lent to it, in dire straits. Arvind Subramanian, the government's (outgoing) chief economic adviser, points to estimates that some 40 to 50GW-worth of coal-fired plants are behind on debt repayments. He says this represents about 15% of "stressed assets" in India's banking system. Many of the banks are state-owned, posing a risk for the economy.

Mr Subramanian, Mr Chandra and others fear that if coal-fired plants go belly up, the banking system would be badly strained. But bankruptcies are unlikely to be forced by banks that want to avoid write downs on loans that will pay off when the expected surge in demand finally comes.

Coal's life will be made harder by increased competition from cheap solar and wind. Because of that, Mr Subramanian suggests that Mr Modi, his solar-evangelist boss, should slow down his roll out of renewable energy. "In my ideal world India should do a bit less renewable and a bit more coal for the next 10-15 years," Mr Subramanian said in May. Some dismiss his comments as deliberately provocative. Yet he has rubbed salt into the wounds of environmentalists by describing efforts to wean energy-poor countries such as India off fossil fuels as "carbon imperialism".

Coal's staying power may be reinforced by India's sense of immunity from interna-

tional pressure to clean up its act. India resists the idea that it cannot put carbon dioxide into the atmosphere simply because the rich world, which produced much more per head during its own development, has used up all the available "carbon space". In fact, the government continues to support coal projects to keep them afloat. A report by the Centre for Financial Accountability, a think-tank focused on India, says that coal projects in India received almost three times as much support as renewable-energy projects in 2017, mostly from government-owned banks.

The last factor supporting coal is that it is far from clear that India's erratic electricity system is up to the task of carrying the quantity of intermittent renewables being planned, or that low renewables prices are sustainable. As everywhere, intermittency is a problem because the sun does not always shine or the wind blow. This means that solar and wind generate less than their installed capacity would suggest. They account for 20% of capacity, compared with 57% for coal. But they generate a meagre 7.7% of output because of intermittency, compared with 75% for coal (see chart 3 on previous page).

Old-fashioned grids, which carry electricity from power stations to homes and businesses, need expensive upgrades to integrate widely distributed solar and wind farms, so that power from states where the sun is shining, for instance, goes to places where it is not. The 158GW of renewable capacity that is supposed to be built over the next four years could put an enormous strain on the system, despite copious recent investment in grids.

There may also be a "renewables bubble" in India, pushing down prices below a sustainable level. Solar firms offering very low bids in power auctions (where the lowest-cost provider wins) may not be able to supply what they promise. States may try to renegotiate prices agreed when renewables were more expensive, which

could put off developers. There are persistent risks related to land acquisition, rights of way and availability of local infrastructure, as well as uncertainty over funding costs. Banks and businesses were misguidedly bullish about coal in the past decade. Why trust them more on renewables? "I don't know why anyone would invest in renewables", says Sajal Ghosh, an energy economist. "But I also don't know why anyone would invest in coal."

Some still live in hope. Ajay Mathur of The Energy and Resources Institute, a research body, points out that if the price of renewables continues to fall to below two rupees per kilowatt-hour, roughly the variable cost of coal-fired power (ie, excluding the cost of building the plant), solar will become the preferred choice for distribution companies. "I'm not sure where the electricity generated by these new power plants will be sold because coal-based power is becoming economically obsolete," he says. Navroz Dubash, of the Centre for Policy Research, a think-tank, agrees. He says it is "kind of crazy" to think that there will still be investment in coal-fired power plants, which last for decades but could be redundant in years. He also describes the idea of supporting coal to bail out the banks as "throwing good money after bad."

Grid pro quo

More likely coal and renewables will live side by side for many years. A lot of Indians still go without power. The average Indian uses a bit less electricity than a citizen of Gabon, a bit more than a Guyanan. Mr Modi may have thrown his weight behind solar and wind but, until other forms of backup power, such as storage, become cheaper, the system will still need coal to keep the lights on. If demand for electricity picks up, with growth in the number of electric vehicles, for example, coal may become yet more important in the energy mix—and the gains from burning less petrol will be offset.

In the long run, the strategy is to put new coal-fired power plants in places like Jharkhand, close to sources of coal and far from big cities. But even there, locals are unhappy. Sitting beside a coal-fired brazier during a blackout near Hazaribagh, a former consular employee from Kolkata, who asks not to be named, picks up and inspects a lump of coal: "Black diamond, they call it," he snorts. He complains that a new NTPC coal mine, whose giant slag heap is just visible against the night sky, is the result of illegal land grabs, which have led to the deaths of protesters. He mourns the pristine forest the mine has dug its way through. "The money behind [coal] is endless, but none of it comes to the locals," he says. "It is all about politics." To a certain extent he is right. And the politics are not going to be resolved anytime soon. ■



Riding India's business cycle



Brexit with no deal

Ready or not

A rising chorus again pitches the case for walking out of the European Union with no deal. It is delusional

THE lure has always been powerful. Why negotiate with an organisation you dislike, which also wants to erode any gains from leaving? Why not just walk out? After all, no deal is better than a bad deal, as Theresa May has often said.

Talk of a no-deal Brexit has revived strongly since the prime minister laid out fresh negotiating objectives in a meeting at Chequers, her country house, last month. Tory MPs report deep dissatisfaction in the party with the plan, which many Brexiteers think gives too much to the EU. Two cabinet ministers resigned for the same reason. Worse, Brussels wants more. Mujtaba Rahman of the Eurasia Group, a consultancy, says that behind the EU's cautious public welcome for Chequers, the private view is very negative.

Faced with such recalcitrance on all sides, Mrs May is reviving no-deal planning. Dominic Raab, her new Brexit secretary, talks of stockpiling food and medicine. Jeremy Hunt, the foreign secretary, says the probability of no deal is increasing by the day. The government will soon publish advice to businesses and individuals of the possible impact. The European Commission has issued similar notes.

A no-deal Brexit sounds simple, but it comes in several guises. One is as a negotiating tactic, to strengthen Britain's weak bargaining position. But this works only if the threat of no deal is credible, and few

people in Brussels think it is. Another of its purposes is to win more support at home for Mrs May's Chequers plan, by showing voters the horrors that would result from rejecting it. So far, this is not working, either. Polls find that voters prefer no deal to Chequers by two to one.

That may be because they think a no-deal separation would be amicable. Both sides could agree to minimise disruption to flights, food supplies and so on. Yet a friendly no deal is implausible. Whether it happened by accident or design, it would now mean Britain rejecting previously

Also in this section

20 The economics of stockpiling

21 Lib Dem entryism

21 The right to die

22 Hidden slavery

23 Espionage and business

Bagehot is away

For daily analysis and debate on Britain, visit
Economist.com/britain

agreed terms, notably a £40bn (\$52bn) exit bill, a guarantee of EU citizens' rights and averting a hard border in Ireland. That would surely make a no-deal exit acrimonious, thereby aggravating its effects. A new study by the IMF finds that these would be bad for all EU countries, especially Ireland and those near the Channel. But they would be worst for Britain (see chart).

Many Brexiteers refuse to accept this. To see why they are wrong, start with trade. Brexiteers argue for trading on World Trade Organisation (WTO) rules, as most non-EU countries already do. Yet with no deal, Britain would be the only big country trading solely on WTO terms. Others, even those without trade agreements in place, have side deals to facilitate customs inspections. Reverting to the WTO is also tricky. Britain is a member, but to take up its rights it must divide import quotas with the EU. Efforts to do this have been opposed by America, Brazil and even New Zealand.

Nor would trade with other countries be trouble-free. Britain benefits from the EU's trade deals with 50-odd countries, including Mexico, South Korea and Japan. Britain hopes to roll these over after Brexit. But that requires the EU's assent, which would be unlikely after a no-deal outcome. The other countries must also agree. David Henig, a former trade negotiator, says they would impose harsh terms, given Britain's weak position.

Customs would be a big problem. Brexiteers say Britain should keep its borders open, without controls or tariffs. Yet the EU would be unable to reciprocate, not least because WTO rules say that tariff-free access would have to be offered to all members. The number of customs forms for exporters would quadruple, costing £20bn a year. An extra two minutes' delay for lorries at Dover would mean long queues in

Losers and losers

Five-year effect on GDP of a no-deal Brexit, compared with no Brexit, %



► Kent. Unilateral free trade would ravage British farming and manufacturing. And one-way free trade does not help lorry drivers, who must return fully laden.

No deal also means a hard Irish border. Again, Brexiteers say London and Dublin could agree not to have one. But with no deal, that would be illegal under the EU's own rules, as well as those of the WTO. Agrifoods, which account for most of the trade across the border, would be badly affected. As well as tariffs, EU food-safety checks would have to be applied, to avoid Northern Ireland becoming an open conduit to evade them. A hard border would rattle the delicate peace process.

Then there are British firms' supply chains. These are now widely spread across the single market. Supermarkets and carmakers alike rely on just-in-time deliveries that would be disrupted by a no-deal Brexit. Switching to non-EU sources would take time and money. So would stockpiling supplies, which for most businesses is impractical (see box).

Regulatory obstacles would be even worse. A no-deal Brexit would take Britain out of all the EU's agencies, as well as its courts. Brexiteers may welcome this, but setting up alternatives would take years. The EU is clear that trade in goods like chemicals, pharmaceuticals or cars depends on Britain meeting its standards. Britain's car industry, which employs 800,000 people and exports 80% of its output, is especially vulnerable, as it would lose EU certification for vehicles, as well as facing 10% tariffs.

There are no domestic regulators to replace the European Medicines Agency and the European Aviation Safety Agency (EASA). The first would stop drug exports, but also imports like insulin that may require re-testing. Radio-isotopes needed for cancer treatments could not be imported after Britain leaves Euratom. Outside EASA, airlines could not fly within Europe. Rules requiring majority EU ownership could cause problems for airlines such as British Airways.

The list goes on. A priority for Brexiteers is to stop free movement of EU citizens. But shortages of border guards and the lack of any registration system will make this impossible for many months. So free movement would be likely to continue even after a no-deal Brexit, says Joe Owen of the Institute for Government, a think-tank. Security co-operation would also suffer as Britain fell out of the European Arrest Warrant and intelligence databases.

Brexiteers may call this Project Fear 2.0, but the evidence is against them. Market confidence would suffer. John Springford of the Centre for European Reform, a think-tank, says a no-deal Brexit would trigger both a recession and a run on the pound. No deal is not a serious option, even if today's febrile politics pretends it is. ■



The economics of stockpiling

Prepping for Brexit

Stockpiling is the talk of the country, but is anyone actually doing it?

BREXITEERS said that leaving the EU would lead Britain to a land flowing with milk and honey. But as worries of a no-deal Brexit mount, the country is instead talking of hoarding emergency rations. Google searches for the word "stockpile" have jumped in the past week, approaching the all-time high seen shortly after the referendum of June 2016.

Some countries could just about cope if their borders were closed to imports, at least in the short term. Britain is not one of them. Imports and exports are worth over 60% of British GDP, twice America's level. Half of Britain's food comes from abroad, most passing through EU ports.

The Brexit secretary has promised, not entirely reassuringly, that there will be "adequate food" whatever happens; the health secretary has said the NHS is preparing to stockpile medicine. Yet it is not clear that enough is being done to honour these pledges. Britain spends some £50bn (\$66bn) a year on medicine and non-perishable food from the EU. So stocking up with enough for just a month would cost around £4bn—more than the entire no-deal planning budget of £3bn set aside in November. Nor is there any sign that reserves are being built up. Food and medicine imports have been steady in recent months.

Companies, many of whose manufacturing methods rely on raw materials and components zipping between production facilities in different countries, are also talking about stockpiling. Airbus says it has asked its suppliers to start "ramping up" their stock of components for its aeroplanes. Pharmaceutical firms

including AstraZeneca, Novartis and Sanofi have said that they will increase their inventories.

Yet the hoarders seem to be in the minority. Take JJ Churchill, a supplier of turbine blades to the aviation industry. The firm held a board meeting on July 31st to discuss whether to stockpile parts, and decided against, as it would tie up too much working capital. Andrew Churchill, the executive chairman, argues that the fog of Brexit makes it unclear which parts are vulnerable to disruption.

Economy-wide data reveal little evidence of firms preparing for "no deal". Firms' stocks of inventories are, if anything, falling. Our analysis of over 5,000 categories of goods shows that imports of parts, raw materials and machinery—"capital" and "intermediate" goods, in the jargon—are in fact declining. That is consistent with a nervousness about the future, though of a different sort. It could suggest that bosses are worried about the strength of demand after Brexit, and may therefore be trimming investment in future production.

If Brexit day approaches with no deal in sight, companies and the government may decide that stockpiling is unavoidable. At that point they would face a problem: a shortage of warehousing. Vacancy rates are already low, thanks in part to the expansion of e-tailers such as Amazon. And stockpiling would require a huge amount of space. Britain guzzles 3bn litres of imported booze every year. A month's supply would be enough to fill 100 Olympic-sized swimming pools. Better start digging.

Britain's third party

Entryist dads

The Lib Dems market themselves as a vehicle for despairing centrists

ONE is 46 years old, the other is a pensioner. One can dance Bhangra, the other is a ballroom guy. One is prime minister of Canada, the other is leader of Britain's Liberal Democrats, who have just 12 MPs. Justin Trudeau and Sir Vince Cable are quite different, but the Lib Dem leader hopes to learn a trick or two from his Canadian counterpart.

Mr Trudeau's Liberal Party jumped from third place to government in four years, after poaching votes from its rivals on left and right. What can it teach the Lib Dems? Without a long career stretching before him, Sir Vince, 75, has the freedom to shake up his party. One plan under discussion in Lib Dem circles would give non-members a vote on the party's next leader, a system the Liberals used during Mr Trudeau's selection. Another idea is to copy the Liberals in doing away with the requirement that the party leader must be an MP. (One non-MP mooted as a possible standard-bearer is Gina Miller, an anti-Brexit campaigner, although both she and the party deny this.) Sir Vince's team has been in touch with one of Mr Trudeau's advisers who helped to devise some of the party's reforms.

The diminished Lib Dems are hardly a "natural governing party", as Canada's Liberals are known. But for all their faults, they may still represent the best hope for Britain's beleaguered moderates. The far-left and the unions have a tight grip on Labour, while the Conservatives' fate is determined by MPs with a penchant for psychodrama and a small collection of Rotary Club members and tombola-spinners in the home counties. By contrast, the Lib Dems have low barriers to entry, making the party an appealing home for disaffected members of other parties.

Talk of a new political movement has been constant since the Brexit vote. But why bother launching your own party, asks one senior Lib Dem, when you could simply take over one that already exists? After all, the Liberal Democrats have 100,000 members, 98 seats in the House of Lords and, crucially, a toehold in Britain's ruthless first-past-the-post electoral system, which new parties find all but impossible to crack.

Entryism presents dangers. But for the Lib Dems, scooping up disaffected Blairites from Labour and liberal Cameroons from the Tories is much less risky than it has been for Labour and the Conservatives to

ally with hard-leftists and former UKIPpers. A Liberal Democrat party overrun by centrist entryists would look like, well, the Liberal Democrats. "They aren't Militant, are they?" says one insider, referring to the Trotskyist group that infiltrated Labour in the 1970s and 80s.

Potential defectors may be wary of the Lib Dems. They have baggage. There is a reason why the party's vote fell from 6.8m in 2010 to 2.4m in 2015. After five years in coalition with the Tories, people no longer liked them. Polls suggest they still don't: the party limps along at about 10%.

Change could come from the top if MPs from other parties jumped ship. Labour's anti-Semitism saga flared again this week after it emerged that Jeremy Corbyn, the party's leader, hosted an event in 2010 at which the actions of the Israeli government were likened to those of the Nazis. But despite disgust among his MPs about his handling of the row, there has been no wave of resignations. Nor has any Tory Remainer MP been persuaded to defect, even as the government's handling of Brexit has gone from bad to worse.

Instead, Lib Dems are left hoping that an era of political polyamory will replace the 19th-century system of monogamous party politics. New movements and parties should team up with the Lib Dems, believes Tim Farron, a former leader. "They have a lot of generals and naff-all army," he says. "We are your army." Such post-party movements are starting to pop up. Cross-party support is growing for a referendum on the Brexit deal, a Lib Dem demand ever since the first referendum. But it would take Labour's backing to go ahead. Unlike Canada's Liberals, the Lib Dems are very far from wielding power by themselves. But if some of their ideas end up being enacted anyway, that may be good enough for them. ■



Yes, we have no MPs

The right to die

An end to proceedings

Pro-life campaigners mourn defeat in the Supreme Court

IN JUNE 2017 Mr Y, an active man in his fifties, suffered a heart attack and extensive brain damage. He died later that year, having failed to regain consciousness. In the final months of his life, the NHS trust responsible for his care went to court to clarify the law. His family believed he would not have wanted treatment to keep him alive; the trust wanted to know whether it needed judicial approval to withdraw sustenance (known as "clinically assisted nutrition and hydration", or CANH), given that doctors agreed doing so was in his interests.

On July 30th the Supreme Court ruled that no such approval was needed. Families will now end up in court only when they are divided over what a relative would want, or when they disagree with their doctors' views.

Many people may be affected by the decision. Improvements in medicine mean people are increasingly likely to survive events that leave them in vegetative or minimally conscious states. A rough estimate by Derick Wade, a professor of neurological rehabilitation at Oxford Brookes University, suggests that as many as 50,000 people in Britain may be in such a condition. The court's judgment also applies to those who are conscious but unable to swallow and to make a decision, of whom there are more.

The decision built on one in 1993 by the House of Lords. It ruled that CANH was a medical treatment, meaning it could be withdrawn if doctors and family agreed it was no longer in the patient's interests. But it suggested applications ought to be made to the High Court to get the go-ahead. Since then, fewer than 200 such applications have been made. Celia Kitzinger of Cardiff University expects withdrawal of CANH to become more common now that there is no need to navigate the courts. Pro-lifers worry about this. Alistair Thompson of Care Not Killing, a campaign group, says that, though the old system had flaws, "the added layer of protection was sensible."

The Supreme Court ruled that the decision in 1993 was "no more than a rule of practice", and that there was no breach of the patient's human rights in withdrawing CANH if continuation was not in their interests. It noted that withdrawing CANH was common in cases with patients suffering degenerative neurological conditions, and saw no reason to treat those in a stable condition differently. It also accepted that the need to go to court might have led fam- ►

ties and doctors to make the wrong decision in some cases.

There is reason to think this is true. The belief that court approval was needed meant doctors often felt absolved of responsibility for decisions, which led to "inertia", says Ms Kitzinger. Moreover, NHS trusts that went to court to withdraw CANH faced a lengthy, complex and expensive process. All of this meant that it was mostly left to families to push for withdrawal. The British Medical Association, which represents doctors, is now expected to issue guidelines saying it should not be up to families to ensure regular assessments of whether treatment is in a patient's interests.

The court's decision is part of a continuing shift away from a legal system based on the idea of the "sanctity of life", towards one based on "patients' autonomy", says Thomas Davies of Dignity in Dying, another campaign group. His organisation hopes that another change is on the way. It is supporting an appeal to the Supreme Court by Noel Conway, a sufferer of motor-neurone disease, who argues that his inability to receive help from a doctor to die infringes his human rights. The court is expected to decide whether to hear the appeal by mid-October. If it does, a more radical reconsideration of the rules around death could yet be to come. ■

Slavery

Of manacles and manicures

Unpaid workers prop up unexpected parts of the economy

PIOTR was lured from Poland to Britain by a friend who promised to find him a good job. When he arrived, he found himself sharing a cold, dirty room with five others, and quickly realised this was a lie. Instead, he was put to work in a recycling plant by criminals who took away his passport and said he owed them money for transport, food and accommodation. A restaurant owner eventually offered Piotr a way out, only to make him wash dishes 60 hours a week for almost nothing. When Hope for Justice, a charity, found him, he was weak and malnourished.

The Home Office believes Britain is home to 10,000-13,000 "modern slaves", by which it means people who are forced to work or who have been trafficked into the country for exploitation. Others put the figure much higher: the Walk Free Foundation, an anti-slavery group, reckons there could be as many as 136,000. The number of people identified by the National Crime Agency (NCA) as possible slaves has been



Caught red-handed

rising fast, from 1,746 in 2013 to 5,145 last year, partly because of a new anti-slavery law passed in 2015.

Modern slavery used to be associated with criminal enterprises such as brothels and cannabis farms, whose illegality leaves workers fearful of reporting abuses. But the variety of businesses known to be using slave labour is broadening, with unpaid workers turning up in fields, factories and high streets across the country.

Vietnamese citizens are the nationality most commonly exploited for labour in Britain, according to the NCA. It says they comprised nearly a fifth of the people identified as potential victims of forced labour between 2015 and 2017. This is largely because of the widespread use of slave labour in Vietnamese-run nail salons, which have been found exploiting teenagers who have been smuggled from Vietnam to Britain in the backs of lorries.

Sometimes such workers are rescued from cannabis farms or other manicure bars, only to be "re-trafficked" by Vietnamese gangs based in Britain, which put them to work elsewhere. In January, for example, three people were jailed for forcing trafficked Vietnamese teenagers to work in nail bars around Britain. Two of their four victims had been re-trafficked after being taken into care.

Other nationalities end up in different industries. Romanians in forced labour often toil at hand car-washes. That business has become so common a centre of slavery that in June the NCA and other agencies launched Safe Car Wash, a smartphone app which helps motorists spot signs of exploitation. Workers in unsuitable clothing, living on-site and charging less than £6.70 (\$8.77) per wash are among the giveaways. On July 30th Unseen, a charity, released a similar app which allows people to report

suspected cases of slavery.

Different regions have their own problem industries. According to a report by the Gangmasters and Labour Abuse Authority, which regulates firms that supply agricultural workers, the most exploitative industry in Wales is shellfish picking, and in the past three years the nationality most commonly taken advantage of there is Sudanese. In Northern Ireland, the poultry and egg businesses are said to be the worst offenders.

A mixture of factors make certain industries magnets for slavery, says Kevin Hyland, the outgoing anti-slavery commissioner. Low-skilled work for which clients pay in cash makes it easier to keep workers off the books. And the lack of rules governing businesses like nail salons and car washes means less contact with officialdom. Even in industries that are more regulated, like agriculture and fast food, the authorities can be slow to enforce the rules, says Mr Hyland, allowing criminals to "sneak in". Prosecutions are rare.

That is also because distinguishing between slavery and merely bad working conditions sometimes proves difficult. In February police raided a daffodil farm in Cornwall over concerns that 200-odd workers at the site were slaves. But no charges were brought. Indeed, on the night of the raid, some of the workers gathered outside the local police station to protest; they later put out a statement indignantly saying that they were not slaves at all, and demanding a public apology.

Identifying the real victims of slavery, such as Piotr, remains the challenge for the police. As some exploited workers continue to toil behind closed doors, others are labouring in plain sight, in industries whose customers might never suspect they were supporting slavery. ■

Espionage and business

Tinker, techie, startup, spy

CHELTENHAM

Britain's spooks get entrepreneurial

EAGLE TOWER, a distinctively ugly high-rise, glowers over the Regency splendour of Cheltenham's posh Montpelier district. However notorious an eyesore, it is also a valuable one; the tower is the centre of Britain's cyber-security industry, worth about £3.5bn (\$4.6bn) a year. Cheltenham used to have the feel of a glorified retirement home. Now it is home to about 10,000 techies, more per person than almost any other town in Britain.

This makeover has a lot to do with the doughnut-shaped building on the edge of town, which houses the Government Communication Headquarters, Britain's secret cryptography and eavesdropping centre. Until a few years ago GCHQ, which has about 6,000 staff at its Cheltenham site, was largely sealed off from the outside world. But that is changing rapidly. GCHQ is playing a central role in developing a cyber-security industry, in which Britain is one of the West's biggest players, along with America and Israel.

About five years ago some of the agency's more entrepreneurial staff began leaving to set up their own companies beyond the wire, in response to a boom in the cyber-security business. One of the most successful of those original startups is Ripjar, founded by Tom Griffin and other ex-GCHQ colleagues. Based in Eagle Tower, Ripjar uses data analytics and AI to counter financial- and cyber-crime. It has expanded rapidly. Earlier this year Sir Iain Lobban, a former head of GCHQ, joined as an adviser. On July 23rd it was announced that Accenture, a big consultancy, had bought a stake in the company, in order to use its technology for its own clients.

Previously people who left GCHQ tended to be frozen out, regarded pretty much as deserters. But where Ripjar first ventured, GCHQ has officially followed. The agency has acknowledged that, as its main purpose is to protect Britain from online threats, it is useful to encourage a proliferation of companies, and experts, that might help it to do that job. This is part of the government's larger cyber-security strategy, launched in 2016.

For a start, GCHQ has created sites where its experts can work with tech companies. Thus the National Cyber Security Centre (NCSC) was set up last year in London. It is now recruiting a second cohort of participants in a scheme called Industry 100, in which cyber-experts from the business world can work alongside, and learn

from, GCHQ staff. A similar site called Tommy's (after Tommy Flowers, the Englishman who built Colossus, the first programmable electronic computer) has been created in Cheltenham.

More directly, GCHQ has started an "accelerator" programme, to kick-start or scale up companies with bright ideas in cyber-security. Nine firms have just finished a year in Cheltenham, in which each company got a grant of £25,000 and office space at a site called Ada (after Ada Lovelace, who laid some of the mathematical foundations for the computer). The first companies have just joined a similar programme in London that the NCSC helped to start.

Licence to code

One participating firm in the Cheltenham accelerator is Cybershield, a startup that specialises in detecting phishing e-mails. Paul Chapman, Cybershield's boss, argues that having the company's work scrutinised and approved by GCHQ experts was the most valuable part of the exercise. Cybershield also worked with GCHQ's Socio-technical Security Group, which draws on behavioural science to examine how people interact with the online world—when choosing passwords, say.

More such collaborations are planned. A "cyberpark" is being built next to

GCHQ's Cheltenham base, costing £22m. This will mainly house cyber-security firms, conveniently close for expert advice.

Not everyone at GCHQ was happy to be drawn into the world of startups and unicorns. Robert Hannigan, who founded the NCSC while head of GCHQ in 2014-17 (and now works for BlueVoyant, a New York-based cyber-security company), says it was "quite a culture shock". But Chris Ensor, a deputy director, argues that making GCHQ more open has been "hugely beneficial" for the agency, "making us think more agilely."

There have already been discussions on how to take GCHQ's baby steps into the commercial world further. For example, Britain could copy In-Q-tel, a venture capital fund set up by the CIA in 1999 to invest in companies that could help the country's spies, including the National Security Agency, America's equivalent of GCHQ. In-Q-tel (whose name is a reference to Q, the quartermaster who supplies gadgets to James Bond) is accessible and open, argues Mr Hannigan, making it still easier for techies to bring their new ideas into the secret world.

Israel also holds lessons, in the way that it fast-tracks former members of its secret signals agency, Unit 8200, into successful cyber-startups. It has worked hard to cultivate a pipeline of tech talent, from school onwards. Britain has copied some of this with its Cyberfirst programme, which sponsors undergraduates to study for careers in cyber-security. But more could be done in schools, especially to get greater numbers of women into the industry. Spying has long been portrayed as a game for tough guys and smooth talkers. These days, the game is being won by nerds. ■



From Cheltenham with love



Also in this section

- 25 Turkey's hostages
- 26 Filthy Ukrainian politics
- 26 Biochips in Swedes
- 27 Charlemagne: Cheer up, Deutschland

For daily analysis and debate on Europe, visit
Economist.com/europe

Russia and nuclear power

Atoms for peace

SOCHI

The world's worrying reliance on Russian nuclear technology

IN MARCH 2011 a tsunami engulfed the Fukushima power plant in Japan, ultimately causing a meltdown. The worst nuclear disaster since Chernobyl, it was a devastating blow to an industry that has been in the doldrums since the 1980s. Nuclear plants closed around the world. The amount of electricity generated by nuclear power plunged 11% in two years and has not recovered since. Within this declining industry, one country now dominates the market for design and export of nuclear plants: Russia.

Flat domestic demand for electricity has curtailed construction of new plants at home, so Rosatom, Russia's state-owned nuclear-power company, has been flogging its wares abroad. It is focused on what Stephan Solzhenitsyn, a nuclear-energy analyst with McKinsey, calls the "great grand middle": countries that are close allies of neither the United States nor Russia. In April Russia started building Turkey's first nuclear plant, worth \$20bn. Its first reactor is due for completion in 2023. Rosatom says it has 33 new plants on its order book, worth some \$130bn. A dozen are under construction, including in Bangladesh, India and Hungary.

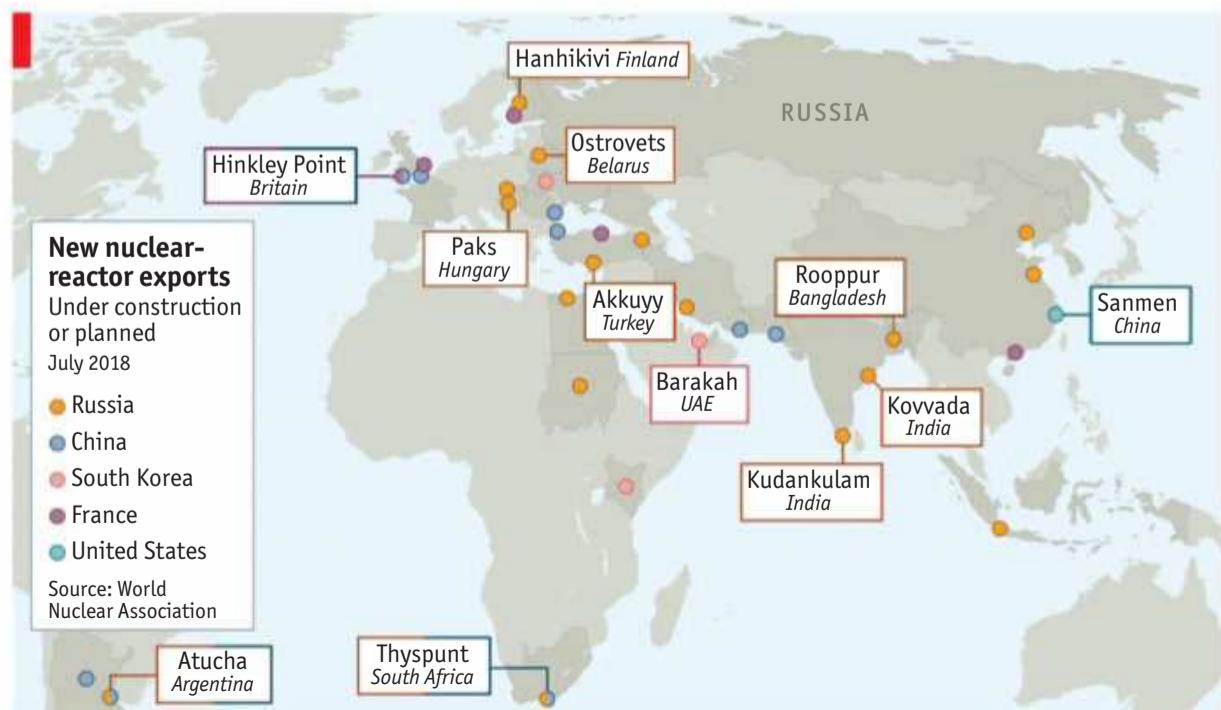
Energy exports have long been a pillar of Russian foreign policy, typically in the form of its abundant oil and gas supplies. Exporting nuclear plants is trickier, but in

some ways a better bet, says Mr Solzhenitsyn. Reactor sales bring in more money than fossil fuels, as they are generally accompanied by a suite of services, including provision of nuclear fuel, training for engineers and regulatory consulting. Each plant is a multi-billion-dollar project, unaffected by swings in commodity prices, and locks customers into decades-long relationships with Russia.

Once completed, the plants offer an obvious diplomatic lever in the form of sway

over a large portion of a country's electricity-generation capacity. In theory Russia might threaten to raise the price of uranium, or simply to close a reactor operated by Rosatom. The relationship between exporter and customer is particularly close in a nuclear plant's early years, when local employees are still being trained and the exporting country is directly involved in the plant's operation. The threat is especially potent in countries where a new nuclear plant represents a significant share of the electricity supply. Rooppur, the Russian-built nuclear-power station in Bangladesh, for instance, will provide 2,400 megawatts, accounting for 15% of total generation capacity.

Vulnerable countries have long grown accustomed to Russia's habit of wielding energy as a geopolitical weapon. Ultimatums over gas supplies were once a regular feature of eastern European winters, but ➤



lately the threat has grown more sophisticated. In 2015 Russia launched a cyber-assault on Ukraine's electrical transmission system. Last week America's department of homeland security said that Russia's military intelligence agency had hacked into the control rooms of American power plants. Cautious hosts might be forgiven for wondering whether their new Russian nuclear plants come with back doors that would enable similar attacks.

Still, Agneta Rising, director general of the World Nuclear Association, says that geopolitics tends not to complicate Rosatom's export plans. Any influence the Kremlin can exert through its plants is limited by the supervision of the International Atomic Energy Agency. Rosatom's influence weakens over time, because customers typically insist that it trains local engineers to run their plants. Customers can source their nuclear fuel elsewhere. And Russian potential mischief-making would spook buyers in other countries.

Yet concerns persist. In 2017 a South African court blocked a \$76bn deal with Rosatom that had been secretly brokered between Presidents Jacob Zuma and Vladimir Putin. Closer to home, this year Rosatom started building a reactor in Hungary months after Mr Putin was warmly received in Budapest by Viktor Orban, Hungary's prime minister. The deal is financed by a €10bn (\$11.6bn) loan from Russia, and Rosatom will operate the plant and supply its fuel. That prompts fears that Russia could use the plant as diplomatic leverage.

Two-state race

Russia's nuclear programme has endured for two main reasons. Its designs are cheap, and Rosatom enjoys the backing of the state, which helps it absorb hard-to-insure risks like nuclear meltdowns. Its competitors trail hopelessly: France's Areva (now Orano) has started building only two plants in the past ten years, in Finland and China; both are delayed and over budget. KEPCO, South Korea's energy company, is facing a domestic backlash against nuclear power, while Westinghouse, in America, is only now emerging from bankruptcy.

Russia's only real competitor is China, another country where government and business are tightly entwined. Until recently China has focused on meeting soaring demand for electricity at home. But importing raw materials and exporting technology is a better long-term bet, and so it has started to look abroad. A Chinese state-backed firm is partly funding Hinkley Point in Britain, and others are involved in plants in Argentina and Turkey. Yet although China will surely catch up, for now Russia has no serious rivals in the export of nuclear technology. In a world that needs to generate much more electricity from nuclear power if it is to take decarbonisation seriously, that is a sobering thought. ■

Repression in Turkey

Erdogan's hostages

ISTANBUL

The detention of an evangelical preacher sours relations with America

IT WAS all smiles and backslaps between Donald Trump and Recep Tayyip Erdogan, the presidents of America and Turkey, at a NATO summit in Brussels last month. And why not? The two men share a taste for demagoguery, handing government jobs to relatives and insulting (or, in Mr Erdogan's case, imprisoning) journalists. But their relationship has suddenly soured.

The row centres on Andrew Brunson, a Presbyterian preacher from North Carolina who was imprisoned in Turkey in 2016 on flimsy terrorism and espionage charges. For two decades Mr Brunson ministered to a tiny flock of Turkish Protestants in Izmir. Christian missionaries are often regarded with suspicion in Muslim-majority Turkey. But Mr Brunson's woes are of a more earthly sort. Relying on secret testimony, Turkish prosecutors allege that he supported an abortive military coup in 2016 that Mr Erdogan says was orchestrated by Fethullah Gulen, a cleric based in Pennsylvania. Mr Brunson also stands accused of links to Kurdish terrorists. His trial began in April. The charges, which he firmly denies, carry up to 35 years in prison. Mr Brunson's family say he has lost weight and suffered depression, and was kept in overcrowded conditions. His cause has been taken up by evangelical Christians in America, led by Mike Pence, the vice-president.

Last week the dispute appeared close to resolution. Mr Trump believed that Turkey would free Mr Brunson in exchange for his efforts to persuade Israel to release a Turkish woman held on smuggling charges. The Americans reportedly also offered to

go easy on Halkbank, a Turkish state lender that faces penalties for helping Iran evade sanctions. But the deal collapsed after a Turkish court merely remanded Mr Brunson to house arrest. Mr Trump fumed that America would impose "large sanctions" on Turkey for the prolonged detention. Denying that he had agreed to a swap, Mr Erdogan dismissed these threats as "psychological warfare". But they are rather more than that. On August 1st the Treasury imposed financial sanctions on two Turkish ministers. Congress is considering a bill that would block loans to Turkey from international financial institutions. The Turkish lira has tumbled.

A series of other arguments has estranged the two countries. Turkey is outraged over American support for Kurdish rebels in Syria. Fearing that its NATO ally is slipping into Vladimir Putin's orbit, America is refusing to deliver a shipment of F-35 fighter jets unless Turkey drops its plans to buy a Russian missile-defence system. Turkey has detained a dozen or so Americans, and three Turkish employees at American consulates, as part of a broader crackdown in connection with the foiled coup.

This tangle of disputes means Mr Trump's threats may backfire. "Ankara sees Brunson as leverage in a grand bargain that includes resolution of all their differences," said Sinan Ulgen, a former diplomat who runs EDAM, a think-tank in Istanbul. For Mr Erdogan to free Mr Brunson now, he adds, would be "perceived as buckling to American extortion".

Other Americans incarcerated in Turkey are even worse off than Mr Brunson, since they lack advocates in the White House. In 2016 Serkan Golge, a 38-year-old Turkish-American physicist working for NASA, was arrested on suspicion of terrorism while on holiday in Turkey. In February he received a seven-and-a-half-year prison sentence. The evidence against him included such enormities as having an account at a Gulen-affiliated bank. ■



Brunson, the Sultan's bargaining chip

Ukrainian politics

The dark operetta

KIEV

Where corruption, violence and political chaos still prevail

ONE morning a history teacher wakes up in Kiev to find himself elected president of Ukraine—thanks to a video secretly recorded by a pupil and uploaded to YouTube. It shows the teacher cursing Ukraine's political class for their lies and its people for their indifference. “Our politicians don't know history, but they are brilliant mathematicians: they all know how to add, divide and multiply their wealth,” he tells a colleague. The video goes viral, and a local oligarch-prime minister backs him in the hope of gaining a puppet. Instead, the new president imprisons the oligarch and goes after his cronies.

This is the plot of “Servant of the People”, a satirical television show that first aired in 2015. Since then 20m people—half of Ukraine's population—have tuned in. Ironically, it plays on a channel owned by Igor Kolomoisky, an oligarch. Less amusing is that Vladimir Zelensky, the comedian who plays the teacher, is in some polls Ukraine's second most popular presidential candidate, beaten only by Yulia Tymoshenko, a veteran populist. Petro Poroshenko, the incumbent, scores just 5%. The election may not be until next March, but the jostling for power is in full swing.

Ukrainian politics have long resembled an “operetta”, as Mikhail Bulgakov, a Kiev-born Russian novelist, scornfully described it in “The White Guard”, set in 1918 during a brief period of Ukrainian independence. A century later Ukraine is still struggling to assert its sovereignty in the face of Russian aggression and crippling corruption. “The state is not performing its basic functions of providing security and justice,” says Anatoly Grytsenko, a former defence minister and a presidential candidate running, unusually, without the support of oligarchs.

The job of regaining sovereignty is especially important for Ukraine, since Donald Trump feels no urge to defend it. If anything he appears to resent the country as a source of trouble for Paul Manafort, his former campaign manager, who went on trial this week in the United States for fraud charges stemming from his activities in Ukraine several years ago.

Yet, Mr Grytsenko points out, to be treated like a sovereign country Ukraine needs to behave like one. “We can't blame Putin for internal corruption, deceit and lack of reforms,” he says. Over the past three years America and the European Union, along with Ukraine's civil activists,

Biochips

Bjorn Cyborg

Why Swedes are inserting microchips into their bodies

ON SOME Swedish trains, passengers carry their e-tickets in their hands—literally. About 3,000 Swedes have opted to insert grain-of-rice-sized microchips beneath the skin between their thumbs and index fingers. The chips, which cost around \$150, can hold personal details, credit-card numbers and medical records. They rely on Radio Frequency ID (RFID), a technology already used in payment cards, tickets and passports.

By one estimate there are 10,000 cyborgs with chip implants around the world. Sweden, home to several microchip companies, has the largest share. Fifty employees of Three Square Market, a Wisconsin-based firm, volunteered to receive chip implants that can be used to pay at vending machines and log in to computers. Individuals can order do-it-yourself kits, which come with sterilisation tools and a needle to inject the device, or attend “implant parties”.



have created the anti-corruption infrastructure needed to break up an entrenched system designed to siphon off public money into offshore accounts. This includes an investigative bureau (NABU), a special prosecution service and an anti-corruption court, finally set up in June under pressure from the IMF and activists.

Yet Ukraine's rulers have done everything in their power to undermine these institutions from within. NABU has accused Nazar Kholodnitsky, the chief anti-corruption prosecutor, of subverting its investigations by leaning on his own prosecutors to drop cases, and tipping off suspects. (He denies these charges.) Last month prosecutors closed an embezzlement case against

where a professional gives chips to a group. Sometimes they get t-shirts that say “I got chipped”.

Jowan Österlund, the founder of BioHax, a Swedish firm, claims chips are more secure than mobile phones because they are hard to hack. But sceptics still have concerns. RFID chips do not have GPS, but they leave a digital trail when they interact with doors, printers or turnstiles. In 2004 the Mexican attorney-general and his staff had chips inserted in their arms that tracked who had accessed sensitive information.

So why take the risk? Convenience is one draw. The infrastructure for microchip use exists wherever contactless IDs or payments are accepted. Sweden is well suited, as the world's second most cashless country (after Canada).

But the chips have little use unless companies play along. Few shops recognise chip implants yet. Even those organisations that do have had teething troubles. When Swedish rail officials began scanning passengers' microchips, they saw LinkedIn profiles rather than evidence of ticket purchases. For now the chips are used largely as digital business cards, substitutes for keys or to store emergency documents such as wills.

So exhibitionism is another explanation. Chip enthusiasts include followers of a “transhumanist” ideology that seeks to optimise human bodies with technology. Elon Musk, an American entrepreneur, has invested in tech that merges machines with human brains. Some Christians, meanwhile, fear that microchips are “marks of the beast” foretold in the Bible. Hardly, says Mr Österlund. After all, “people once thought the Beatles were the Antichrist.”

the son of Arsen Avakov, the powerful interior minister, which NABU had opened.

Vitaly Shabunin, head of the Anti-Corruption Action Centre, a civic organisation, says that the old system has been rocked but that it is now fighting back. He has been harassed by the authorities himself. On July 17th, as he campaigned for Mr Kholodnitsky to be fired, thugs attacked him with antiseptic dye in full view of the police.

“We are fighting for our life, and we have not got much time,” says Mr Grytsenko. His support has been rising despite his lack of money or access to the oligarch-controlled media. Some voters still crave honesty in their politicians. The risk is that the bloody operetta will prevail. ■

Charlemagne | Cheer up, Deutschland

The biggest risk to Germany is excessive pessimism



A VISITOR to Germany this summer will find a country living well. Gentle chit-chat and the clink of glasses murmur from sun-dappled beer gardens. Barges laden with exports chug up the Rhine. Prosperous vacationers travel to lakes and seaside resorts in new cars and slick, reliable trains. Yet striking up a conversation with one of these seemingly contented locals, the traveller may well be told that the country is going to the dogs. The discussion might begin with disconsolate reflections on the national team's dismal performance in the football World Cup, then find its way on to the storm clouds over German industry, political instability and perhaps the difficulties of integrating the many migrants who have arrived in recent years. Are they really talking about the same country?

Pessimism comes easily to Germans. Gloom stalked their literature even before the traumas of the 20th century. "Simplicius Simplicissimus," the first great German novel, describes a peasant wandering the devastated Holy Roman Empire after the Thirty Years War; Goethe and his contemporaries imagined love-struck romantics killing themselves in dark forests; Wagner's Ring Cycle ends with Valhalla in flames. Few Germans ever quite believe that calamity is not just around the corner, reckons John Kornblum, a former American ambassador. He relays a tale of a woman who came up to him in the street unbidden and warned him that he would trip over and die if he failed to tie his shoelace.

This also expresses itself in perfectionism. Board a train with a group of Germans and one will soon start grumbling about some minutia: the temperature, the disorderly storage of luggage, a brief delay. The same habits undergird Germany's industrial success. Its factories are staffed by conscientious workers who treat each blemish as an abomination, honing and re-honing production processes until everything is in *Ordnung* (order).

Lately, however, this propensity to fear the worst has become more pronounced. Perhaps it began when the upbeat *Willkommenskultur* ("welcome culture") accompanying Angela Merkel's decision to keep the borders open to refugees in 2015 curdled into a scepticism about how culturally compatible the newcomers really were—with several high-profile cases of migrant crime fueling anxieties. Other factors include the rolling scandal over German carmakers' cheating in emissions tests, and last September's

federal election. That saw the far-right Alternative for Germany (AfD) party enter the Bundestag for the first time, and prompted an unusually long and fractious process of negotiations, resulting in another uninspiring "grand coalition" under a weakened Mrs Merkel. Then in June the Christian Social Union, the chancellor's conservative Bavarian allies, took her new administration to the brink of collapse over disagreements on asylum policy.

So when the German team, the reigning champions, crashed out of the World Cup during the group stages—under a coach, Joachim Löw, widely compared to Merkel for his unflashy longevity—it seemed to symbolise a land in trouble. "The Torn-Apart Country" bellowed the cover of *Stern*, a news magazine, in the week of the match. "Germany in Crisis: once upon a time there was a strong country" ran a headline in *Der Spiegel*. Inside, the weekly diagnosed timidity and complacency in both the team and the nation it represented.

The liberal hand-wringing intensified last month when Mesut Özil, the Turkish-German star midfielder, resigned from the team. Right-wing politicians and football bosses had questioned his loyalties after he allowed himself to be photographed with Recep Tayyip Erdogan, Turkey's despotic president. "I'm German when we win and an immigrant when we lose," wrote Mr Özil. *Bild*, the tabloid that led the criticism of him, increasingly portrays Germany in doom-laden terms: a poorly governed country plagued by criminals and barely tolerable Muslims.

Don't fear the wurst

This is all getting out of hand. Pessimism, and the associated perfectionism, may be a German strength—but in moderation. And that moderation risks succumbing to the latest bout of hyperventilating self-denigration, along with basic facts about the state of the country. Germany's economy, for example, is powering ahead. Unemployment is at a record low, and exports are booming. Its infrastructure is among the best in the world. Inequality remains lower than in most other rich countries and the quality of life higher (the fourth best in the world, according to the UN's Human Development Index). German politics, it is true, is fragmenting, as in other European countries, but Mrs Merkel remains a sensible and decent leader, and moderate forces still dominate.

And the immigrants? By April this year 26% of refugees admitted to Germany since 2015 were in employment, more than expected. Crime fell to a 30-year low last year, with the largest long-term falls among immigrants. If rightists are becoming more vocal in their opposition to Germans of immigrant background, like Mr Özil, it is because their monocultural vision of Germany is losing the battle: the proportion of non-ethnic German residents is rising fast, with ever more reaching prominent roles in public life. The share of MPs with a migrant background rose from 3% to 9% over the two elections to 2017. Germany's most popular politician, Cem Özdemir of the Greens, is of Turkish origin, too.

Germany overlooks such facts at its peril. Mainstream politicians will not halt the rise of the AfD by parroting its inaccurate portrayal of the country as an unruly shambles. The country does not invest enough—threatening its competitiveness and contributing to international economic imbalances—but pessimists do not invest. Cracks in the liberal international order threaten German interests, but introspective gloom will surely prevent the country from taking more responsibility for its preservation. For its own sake and that of others, it is time for Germany to lift its gaze from its navel, grasp the bigger picture—and cheer up. ■



The Democrats

Splitting the difference

HINESVILLE

Stacey Abrams does not just want to govern Georgia. She also wants to change how Democrats campaign in the age of Trump

TWO questions hang over this year's mid-term elections: how will President Donald Trump affect Republican campaigns, and how should Democrats respond? For an answer to the first question, look at the Republican primary for governor of Florida. Late last year Ron DeSantis was considered a long shot. Staunchly conservative but little known outside his congressional district, he faced Adam Putnam, a fixture in Florida politics since his election to the state legislature in 1996. Then Mr Trump endorsed him. Now Mr DeSantis, who on July 30th released a television advertisement showing him building a wall with his children and reading from a book by Mr Trump, enjoys first place in the polls. At a rally on July 31st Mr Trump called him "a tough, brilliant cookie".

The governor's race in Georgia has been Trumped, too. Brian Kemp, whose campaign advertisements featured him threatening a teenage boy with a shotgun and boasting of his "big truck, in case I need to round up criminal illegals and take 'em home myself", came second in the first round of the Republican primary after Casey Cagle, the current lieutenant-governor. After the president endorsed him, though, Mr Kemp won the run-off election.

In the general election he faces Stacey Abrams, who would be the first black woman ever elected governor in America.

She is fighting uphill. Not since 1998 has Georgia elected a Democratic governor, and Democrats hold no statewide office. But Mr Trump won the rapidly diversifying state by only five points, and Ms Abrams is a strong candidate. She is detail-driven and policy-fluent, with a (Bill) Clintonian gift for retail politics. And she is running a different sort of race—one that seeks to answer the second question, about how Democrats should respond to Mr Trump.

For years, explains Bee Nguyen, a member of the Georgia House, Democrats have believed that "if we ran a more moderate campaign with a moderate policy platform...we can flip enough moderate Republicans" to win. They have mostly courted white suburbanites, relying on non-white voters to join them. That approach has failed. In 2016 Jim Barksdale lost a Senate election by over 14 points. In 2014 two scions of Georgia's political families, Michelle Nunn and Jason Carter (grandson of President Jimmy) lost Senate and governor's races.

By contrast, Ms Abrams is trying to expand the electorate. In 2013 she founded the New Georgia Project, which aims to register hundreds of thousands of new voters. The project says that the people it calls "the new American majority"—non-whites, unmarried women and 18- to 29-year-olds—comprise 62% of Georgia's vot-

Also in this section

- 29 The politics of climate change
- 30 Dancing horses in Illinois
- 30 Amazing GDP figures
- 31 Throwing money at defence
- 32 Lexington: Trump takes on Afghanistan

For daily analysis and debate on America, visit
Economist.com/unitedstates
Economist.com/blogs/democracyinamerica

ing-age population but just over half its registered voters. Ms Abrams claims to have registered over 200,000 voters in the past five years, though some doubt that.

She has certainly travelled widely and invested heavily in field offices and personal appearances, especially in places where Democrats seldom go. She has also cultivated her national profile. One party activist says that the two approaches reinforce each other. Rural voters want to meet the woman they see on TV shows like the one presented by Rachel Maddow, a left-winger. Ms Abrams is unlikely to win huge numbers of rural votes. But, argues Al Williams, who represents a rural district in Georgia, "she'll run as good as any Democrat in conservative areas, and better than any in more diverse communities."

The Republican Governors' Association has begun running advertisements calling Ms Abrams "too liberal for Georgia". In fact, while she was in the legislature, her centrism irked some Democratic colleagues. She is running on a standard set of Democratic concerns: public education, Medicaid expansion and economic development—helped in the last case by Mr Kemp's Trumpian rhetoric. During the primary campaign he backed a measure to withdraw a tax break from Delta, an airline that is a big local employer, to punish it for ending a discount for members of the National Rifle Association. He has since endorsed a move to suspend collecting taxes on jet fuel. Georgia's many large firms might prefer a steadier hand.

Ms Abrams is, in effect, building an Obama coalition of non-white, young and white progressive voters, which Democrats have seldom tried in conservative and swing states. Rather than appealing to swing voters and hoping the Democratic ➤

base turns up because it has nowhere else to go, she is trying to broaden and energise the base while hoping to pull in some swing voters and suburban moderates repelled by Mr Kemp.

Despite Ms Abrams's voter-registration efforts and an energised base, over 50,000 more Republicans than Democrats voted in this year's primaries. Still, that is hundreds of thousands more than the Democrats managed in 2010 or 2014. Mr Trump's approval rating in Georgia, though positive, has slipped, giving her an opening.

And Mr Kemp was not the Republican establishment's first choice. Like Mr Trump's endorsement, that probably helped him prevail in the party primary. It may hurt him in the general election.

Whoever wins in November will govern Georgia in 2020—a census year, when new congressional districts are drawn. A win by Ms Abrams may mean another reliably Democratic congressional seat or two. More important, it would be a lesson for the Democratic Party about how to build winning coalitions. ■

The politics of climate change

A slow thaw

WASHINGTON, DC

Some Republicans are inching towards action on global warming

CARLOS CURBELO, a Republican congressman from southern Florida, represents a district vulnerable to both climate change and a Democratic swing in the mid-term elections this November. Perhaps that is why, on July 23rd, he offered a bill that would tax carbon pollution. The measure is symbolic and doomed to fail. Just a few days earlier, Mr Curbelo's fellow Republicans voted overwhelmingly for a resolution calling a carbon tax "detrimental to American families and businesses". Just six Republicans voted against the proposal. But even that represents progress. When an identical measure was offered in 2016, not one was brave enough to do so.

Republican orthodoxy on climate change can seem unassailable. The party platform pooh-poohs climate change as "far from this nation's most pressing national security issue" and opposes any carbon tax—generally thought to be the most market-friendly way of reducing emissions. But the odd crack is showing. Some coastal Republicans who must contend with the consequences of a warming planet do not attempt to deny the scientific consensus. Carlos A. Gimenez, the mayor of Miami, was plain when talking about rising sea levels last year: "It's not a theory. It's a fact. We live it every day."

Others have been swayed by political currents. More than half of the Republicans who represent districts won by Hillary Clinton in 2016 are members of the Climate Solutions Caucus, a bipartisan group that advocates climate-change fixes. Some endangered Republicans defend the environment, if only in a NIMBYish way. Unfortunately for the overall sanity of their party, those Republican politicians are the most likely to lose their jobs if a Democratic wave transpires this autumn.

According to a survey by the Pew Re-

search Centre, 52% of Republican voters think there is "solid evidence" of global warming—up from 39% three years ago. Only 24% believe that human activity is to blame, though, compared with 78% of Democratic voters. That huge partisan gap has grown since the 1990s, when President Bill Clinton and Vice-President Al Gore turned green and made it a Democratic cause. "There's a huge identity-based effect based on the cues Republicans have received from Fox News, conservative media and elected officials telling them that the science is uncertain," says Matthew Nisbet, who studies political communication at Northwestern University.

Yet moderate and younger Republicans are more likely to agree with the established science. And support for green policies can be found in odd places. Slim majorities of registered Republicans back limiting carbon-dioxide emissions from

coal-fired power stations and favour a carbon tax on fossil-fuel companies, according to a survey conducted in March by the Yale Programme on Climate Change Communication. Bob Inglis, formerly a Republican congressman representing South Carolina, who introduced a carbon-tax proposal nine years ago, still thinks it could win support. Conservatives have long had difficulty talking about climate change because the debate is often framed in the "language of repentance, guilt and doing with less, which doesn't work well in the conservative community", Mr Inglis says. Carbon taxes are less preachy, especially if they are balanced by tax cuts.

Small signs of compromise can be seen at the edges of climate policy. In February Congress passed a bill that provides tax credits for carbon capture and storage, a technology that prevents emissions from entering the atmosphere by placing them underground. A bipartisan group of senators also pushed through a bill that would speed advanced nuclear reactors to market. Grander schemes are unlikely to succeed during the presidency of Donald Trump, who pulled out of the Paris climate accord. On August 1st he nominated Kelvin Droegemeier, a respected weather expert, as his science adviser. Whether he will follow his advice is a different matter.

The vicious partisanship over climate change is bad for America and the world. That a rich, well-run country cannot pass a bipartisan law to deal with climate change is a tragedy. But if much Republican opposition to climate science is purely political—a way of identifying yourself as not a Democrat—then it can be swayed. Two social psychologists, Leaf Van Boven and David Sherman, have found that Republican voters will back carbon taxes if they are told Republicans favour such a policy. If a leading Republican were to start singing a different tune, admittedly a remote prospect, his or her party could soon join in. ■



No, I can't see it, either



Lipizzans

Dancing horses in the Midwest

OLD MILL CREEK

How the Habsburgs' favourite horse conquered American hearts

WITH their German and Austrian ancestry, midwesterners lovingly cultivate many traditions brought from their *Heimat*. In autumn gallons of beer and brats are consumed at Oktoberfests, to the sound of polka bands. Christkindl markets follow in December. But perhaps the most rarefied and labour-intensive import from Mitteleuropa to the Midwest was the care of 20 Lipizzans that Tempel Smith, a steel magnate, brought from Austria to Illinois 60 years ago. Known outside America as Lipizzaners, they are Europe's oldest and finest horse breed.

Smith and his wife Esther fell in love with the horses after seeing them perform at the Spanish Riding School in Vienna. They soon built the largest privately owned herd of Lipizzans (peaking at almost 500 horses in the 1980s) and the only farm in America where Lipizzans breed, train and perform. "Tempel is very important for us, because we have few private breeders in Austria," says Max Dobretsberger, who runs Piber, the state-owned stud farm in Austria that is home to the breed.

Attired in green Austrian traditional garb, Mr Dobretsberger attended Tempel Farm's party to celebrate the 60th anniversary of the arrival of the Lipizzans in Illinois at the end of July. The white stallions, with their riders in Napoleonic red, blue and white uniforms and bicorne hats, performed the Capriole (in which the horse kicks out dramatically with its hind legs while making a tricky leap into the air), the Courbette (forward jumps on

the hind legs), the Levade (sitting on the hind legs, with forelegs drawn up) and a quadrille, which involves four riders and intricate pass-throughs. Mares and foals were released into the arena for a run around. The three- to five-month-olds were dark: Lipizzans become pure white as they get older.

Lipizzans have a rich history linked to the Habsburg monarchy. But many Americans learned about them by seeing "Miracle of the White Stallions", a Disney film released in 1963. This depicts the dramatic rescue of Lipizzans confiscated by the Nazis by American troops under the command of General George Patton, an avid equestrian who feared the beasts would be eaten by advancing Soviet troops. The Tempel Lipizzans formed part of the inaugural presidential parade for Richard Nixon in 1969. They played a similar role for Jimmy Carter, Ronald Reagan and Barack Obama.

Americans are known for bastardising and spoiling Old World imports, and this is sometimes true (of pizza, for example). But midwesterners are making more of an effort to keep the Lipizzan line going than many private breeders in Europe. The Europeans have grown keener on Hanoverians and Holsteiners, which are exceptionally good at dressage competitions. The good-natured, sociable Lipizzans were bred for pleasure, not war—or cut-throat Olympic competitions. And the Christkindl markets of the Midwest are nicer and less kitsch than many German ones, too.

The GDP figures

Growing pains

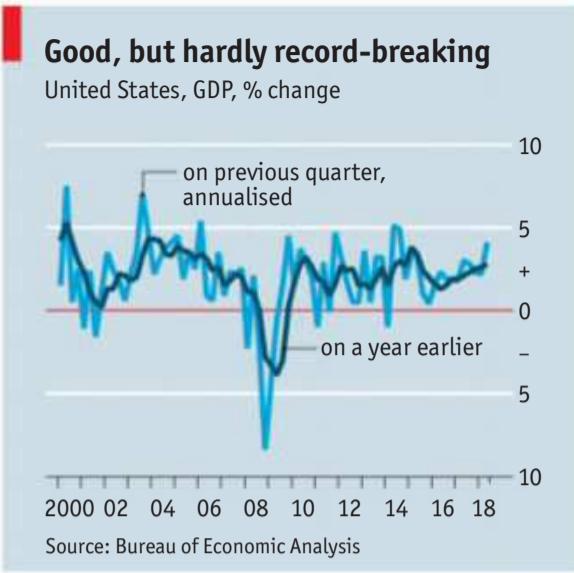
The economy is as strong as Donald Trump says—but perhaps not for long

STATISTICAL releases seldom propel presidents onto the White House lawn for press conferences. But on July 27th President Donald Trump was "thrilled" to announce that America's economy grew by the "amazing" rate of 4.1% in the second quarter of 2018—enough to put it on track for average annual growth of over 3%. Most important, he bragged, "these numbers are very, very sustainable."

Championing early estimates of GDP is a risky business, because perky performance can be revised away. In this case the numbers were an advance release based on incomplete data. Between 1993 and 2016 such estimates were revised by an average of 1.3 percentage points. (Of course, what can go down can also go up.) The 4.1% growth rate that Mr Trump found so stunning was an annualised one, which compounds quarterly GDP growth assuming three more quarters of identical change. That measure is prone to being bumped around by one-off effects. The latest figures were boosted by a temporary surge in exports of "foods, feed and beverages", as exporters of soyabeans raced to get their produce into China ahead of tariffs imposed on July 6th. Though very strong, the growth was hardly unprecedented. It was higher four times during Barack Obama's presidency (see chart on next page).

Yet the figures are not to be scoffed at. Analysts were pleasantly surprised by the composition of growth, which appeared to be fuelled by American shoppers buying cars, clothing and footwear, as well as paying for housing and health care. Using a smoother measure of growth, which compares quarterly GDP with the same quarter a year ago, the economy still grew in the second quarter by a healthy 2.8%. If growth for the year as a whole reaches 3%, as the president has boldly predicted, few forecasters would be shocked. In April the IMF forecast growth of 2.9%; the non-partisan Congressional Budget Office (CBO) went for 3.3%.

Mr Trump's claim that a 3% growth rate is sustainable is more dubious. The tariffs he loves to impose could blow the economy off course. Even if they do not, some part of the economy's buoyancy is probably only temporary, and related to a cyclical upswing. Some is probably due to the recent tax cuts, which the CBO estimates will add around 0.3% to American GDP this year and 0.6% next year. Beyond that, they reckon, the positive effects will fade as ►



► bigger budget deficits crowd out private-sector investment.

In the long run, America's economic potential depends on how many workers it has and how productive they are. The workforce is growing more slowly than in the past, partly because the large baby-boom generation is retiring and partly because the surge of women into paid employment has run its course. Given how disappointing productivity performance has been in recent years, it is unsurprising that bodies like the CBO and the Federal Reserve seem sceptical that the American economy can sustain a real long-run growth rate far above 2%.

The president's economic team may protest that his tax reforms should stoke investment, raising America's economic capacity. Business investment grew by an annualised rate of 7.3% in the second quarter of 2018. That is welcome, but it cannot really be attributed to the tax package. About half of the overall rise reflected a high oil price stimulating investment in mining exploration, shafts and wells. Alternatively, critics of the Federal Reserve gripe that its gloomy forecasts have been self-fulfilling, and that America's persistently disappointing wage and productivity growth over the past few years comes partly from monetary policymakers' unwillingness to let the labour market roar.

If Mr Trump is wrong, and the economy cannot sustain a growth rate of 3%, policies to try to get it there may only stoke price increases. The rate-setters at the Federal Reserve are keenly aware of this risk. On July 31st new figures revealed core inflation (excluding volatile food and energy prices) to be 1.9%, close to the 2% target. Although they held interest rates steady when they met on August 1st, two more increases are expected this year. Rate-setters fear that a burst of inflation is too close for comfort, and that if they do not squeeze the economy's brakes slowly now, a more abrupt stop might be required later. In doing so, they are making Mr Trump's hopes of 3% growth harder to realise. To the president, this may seem cruel. But he is not alone in the driver's seat. ■

Defence spending

Pushing the boat out

Politicians are vying with each other to spend more on defence equipment

IN SOME democracies, politicians must be cajoled into spending money on armour and missiles rather than schools and hospitals. Not in America. The \$716bn defence bill for 2019 now passing through Congress provides for an even faster arms build-up, of ships and submarines in particular, than President Donald Trump's administration proposed.

The House and Senate vied with each other to pile on procurements before compromising on a plan that accelerates the pace of submarine-building (raising from ten to 12 the number of attack submarines to be ordered by 2023) and adds a third aircraft-carrier to the two requested by the White House. Two extra combat ships of a smaller type were thrown in too.

This contest to procure more hulls reflects something more than machismo or political posturing. Since the final weeks of the Obama administration, the navy has been committed to rebuilding its strength to 355 ships, from about 280 now. American defence planners speak bluntly about the main reason for this relentless construction. The cause is the re-emergence of what James Mattis, the defence secretary, calls "great-power competition".

Russia and China, sometimes acting in concert, are challenging the mastery of the world's oceans which the American navy, with its ten aircraft-carriers, has taken for granted since the end of the cold war. Admiral John Richardson, the chief of naval operations, expressed current thinking when he told a congressional panel in March that China's rise and a resurgent Russia meant "America no longer enjoys a

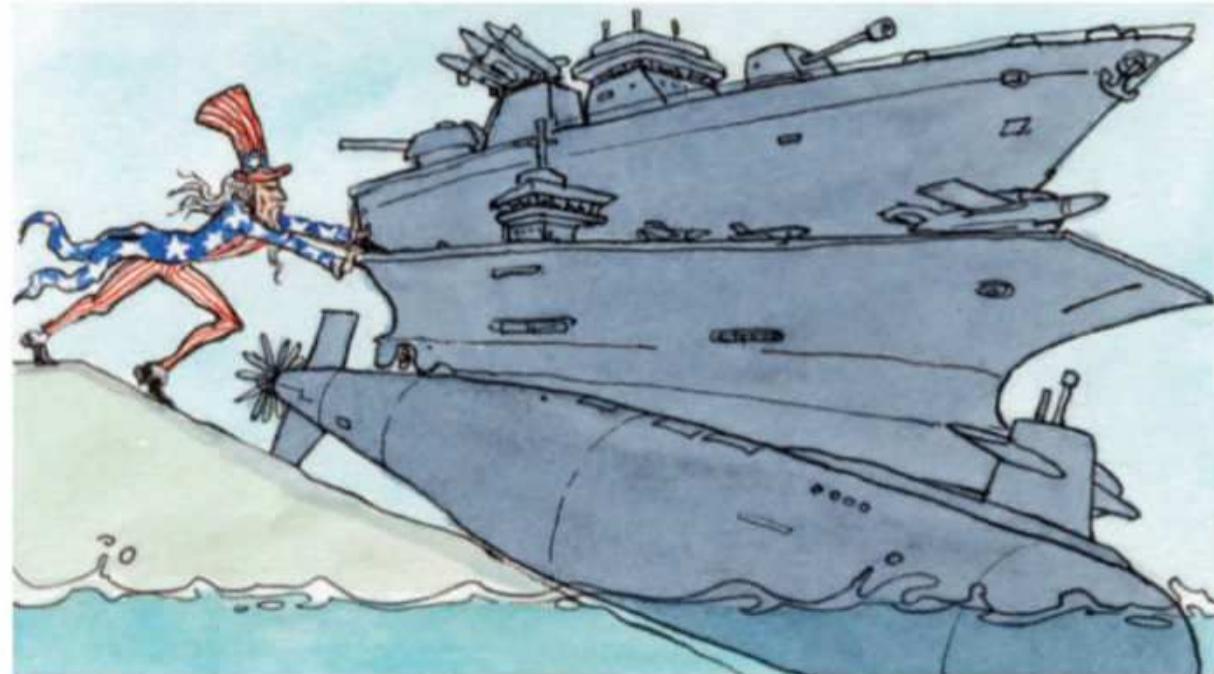
monopoly in sea power or sea control".

Neither country can begin to match the American fleet ship for ship. But both are investing in technologies, from hypersonic missiles to undersea drones, that could threaten America's dominance. When President Vladimir Putin boasted in March about Russia's deadly new weapons, he showed a video of the hypersonic Kinzhal missile knocking out a cluster of ships. Bluster, perhaps—but the intention was clear. China claims to have developed a uniquely stealthy submarine.

Although America's politicians and military leaders concur that a rapid build-up is needed, they do not quite agree on how it should be achieved. Whereas legislators emphasise new boats, some naval planners argue that the 355-ship target could be hit sooner if more money were spent on refitting old vessels. Bolting new weaponry, such as laser guns, onto old hulls will be tricky, given the colossal amount of electric power that the latest weapons will gobble up. But Russia is trying to show that smart new missiles can be put on old tubs.

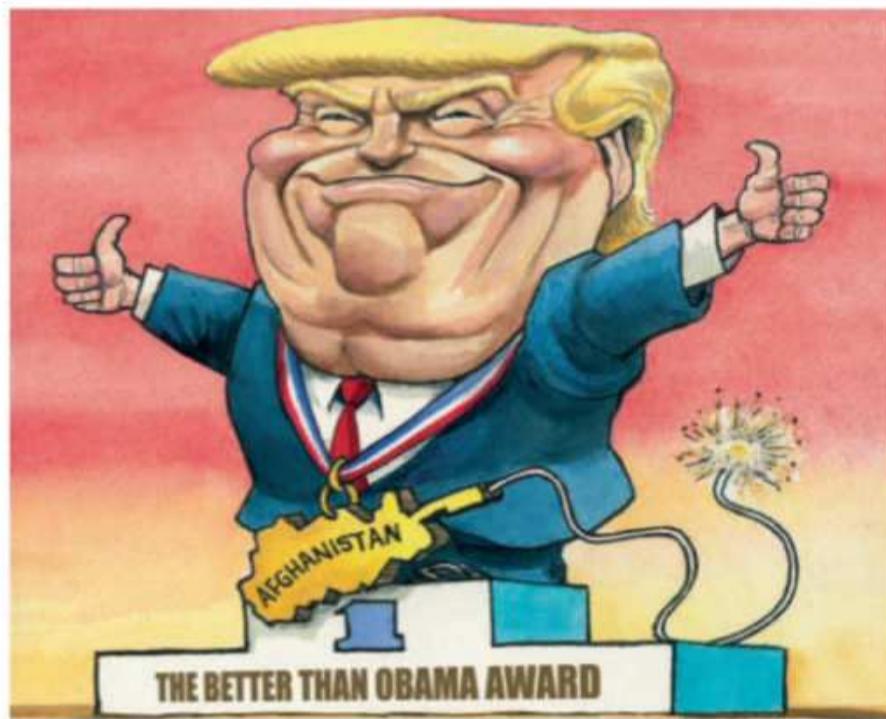
For American admirals, tightening up operational procedures on vessels now in their prime is another priority, following a bad run of fatal accidents and collisions last year. For them, "readiness is as important as new hulls," says Nick Childs, an analyst with the International Institute for Strategic Studies.

In about a decade, America's fleet of attack submarines will shrink, reflecting decisions taken in calmer times. Even if new boats are built as fast as possible, the number will fall from 52 now to around 42 by 2028. Bryan Clark, a naval specialist with the Centre for Strategic and Budgetary Assessments, an influential think-tank, believes Congress is right to hurry along with submarine building. He sees no need to accelerate surface-ship construction, at least until a new frigate has been designed. In this case, America could be throwing too much money into the sea. ■



Lexington | The gift of low expectations

Donald Trump is doing better on Afghanistan than his predecessor



ONCE-popular argument that President Donald Trump's approach to foreign policy is not substantially different from Barack Obama's is going down in a blaze of trade agreements. Yet on Afghanistan it remains broadly true. Mr Obama came to power describing Afghanistan's conflict as the "war we have to win", but never seemed convinced that that was possible. After a stab at escalating the conflict, he devoted his presidency to ending it. It was time, he said in 2011, the year the war became the longest in American history, "to focus on nation-building here at home." Mr Trump has long said the same. His decision to launch a much smaller escalation last year came with the closest thing he can muster to an apology attached: "My original instinct was to pull out, and historically I like to follow my instincts." Even so, his record on Afghanistan, including this week a promise of peace talks to add to that modest military reinforcement, is starting to look much better than his predecessor's.

This chiefly reflects what a low bar Mr Obama set. Reluctantly persuaded that withdrawal from Afghanistan would spell defeat, as the Taliban rushed to seize the territory vacated by over 100,000 Western troops, Mr Obama left 8,000 behind to hold the line. But with the Taliban controlling or contesting 70% of the country, the largely incompetent Afghan army flailing, and the Americans bound by strict rules of engagement, it was unclear how they could. At the request of his generals, who may fear the strategic impact of defeat in Afghanistan as much as the prospect of it again falling into the hands of foreign terrorists, Mr Trump grudgingly agreed to send 3,500 reinforcements. He also relaxed the rules and increased American air strikes, military trainers and mentoring of front-line Afghan troops. He presented these changes as a rebuke to his predecessor. They might alternatively be seen as an acceptance of Mr Obama's shrivelled ambition—to stave off defeat in Afghanistan until the Afghan government can fend for itself—and a modest attempt to make that achievable.

Unsurprisingly, then, Mr Trump's measures have not transformed the battlefield, where the Taliban remain in the ascendant. Instead of encouraging the Afghan government to take back territory, America is reported to be urging it to withdraw from remote outposts to reduce casualties. The level of violence continues to be horrifying, especially among civilians. More were killed

in the first six months of this year than in any previous year on record, in part because of increased American bombing. Yet there is at least more confidence that the Taliban can be prevented from taking a major town. And the 315,000-strong Afghan armed forces are said to be improving. Compared with the debacle Mr Trump inherited, this represents progress.

Revelations that a senior American diplomat, Alice Wells, met Taliban representatives in Qatar last month are also encouraging. America and its Afghan ally have been keen to negotiate with the insurgents since the demise of Mr Obama's short-lived surge confirmed their inability to end the war militarily. But they have generally insisted that the government must lead that effort. Meanwhile the Taliban, to underline that their foremost demand is the withdrawal of foreign troops, say they will only speak to America. It is therefore notable that Ms Wells's meeting appears to have taken place without any Afghan official present. That represents an overdue acknowledgment by America that the Taliban are formidable enough to set negotiating terms. It also implies an admission that America is not merely the benevolent instrument of Afghans' democratic will it claims to be, but an independent actor in a multi-layered civil conflict, whose continued presence in Afghanistan is a legitimate subject of debate.

This is still a far cry from offering Mr Trump a way out. Stitched together by British imperialists in the late 19th century, Afghanistan's feuding ethnic groups have never shared power uncoerced, and 40 years of on-off civil war have made them even more reluctant to. The government is deeply divided along ethnic lines. It is hard to imagine how its members might accommodate the Taliban—even if they want to be accommodated. It is unclear that the mullahs have given up on a military victory. It is even unclear which faction of the Taliban, the fundamentalist leadership or the more pragmatic rump, their representatives in Qatar might speak for. If Mr Trump does view the putative talks as a means to declare victory and quit Afghanistan, as some suspect, he has simply given up on the place.

If the president still wants to avoid that, however, he can probably do so indefinitely. The war has cost America a trillion dollars—more in real terms than it spent on rebuilding Europe under the Marshall Plan—and the lives of 2,300 troops. Yet its current cost—roughly \$45bn and around a dozen lives a year—is modest enough to invite little interest from Congress or the media. That suggests Mr Trump's strategy is sustainable.

Hindu koshed by reality

There are many ways it could go wrong nonetheless. Mr Trump's perceived success is fragile, being largely a reflection of Mr Obama's failure. That indicates the degree to which America's attitudes to Afghanistan have always been shaped as much by domestic politics as Afghan reality. The Bush administration demonised the Taliban as terrorists to justify the war on terror. Mr Obama launched his surge in part because he had long harped on Afghanistan as a means to criticise the war in Iraq. Mr Trump launched his mini-surge in part to repudiate Mr Obama. But Afghan reality always asserts itself in the end. The presidential election due next year could provoke a crisis that might persuade any president to wash his hands of the place.

Yet for now something unexpected is happening. Mr Trump is scoring a modest foreign-policy win where Mr Obama failed badly. And he is doing so despite sharing his predecessor's views on Afghanistan and making only small alterations to his policy. ■



Brazilian banks

In the doldrums, with full sails

SÃO PAULO

The economy is sluggish, but banks are highly profitable. A less distorted financial system would boost growth, without damaging the banks

BRASIL'S economic weather tends towards extremes. During the 1980s and early 1990s hyperinflation raged. From late 2014 to late 2016 GDP shrank by 7.7%, its longest contraction ever. Conditions are now enervatingly calm. GDP grew by just 1% last year, and in June the central bank cut its growth forecast for 2018 from 2.6% to 1.6%. A truckers' strike in May and uncertainty about the outcome of elections in October have curbed economic activity, weakened the currency and pushed up government-bond yields.

Yet the country's big private-sector banks have prospered regardless. In the recession, neither Itaú Unibanco nor Bradesco, the two biggest, saw their return on equity (ROE, a measure of profitability) fall below 15.9%. On July 30th Itaú reported net income for the first half of 2018 of 12.5bn reais (\$3.3bn), and an ROE of 20.1%. A few days earlier Bradesco and Santander, the local arm of a Spanish lender, reported ROEs in the high teens. Most European banks are stuck in single digits. As the central bank slashed its interest-rate target, the Selic, from 14.25% in October 2016 to a record low of 6.5% in March this year, some analysts predicted a squeeze on profits. It hasn't happened yet.

The resilience of Brazil's banks reveals much about the way the economy functions, not all of it good. Back when inflation was "1½% a day", says Cândido Bracher, Itaú's chief executive, banks were forced to become efficient at transferring and man-

aging money. Now they operate in a financial market riddled with other distortions. Some hurt their profits; others puff them up. Public-sector banks have a big and privileged role, which both constrains their private-sector competitors and shields them from risks, like some lending to the government's favoured sectors.

All of this means that lending, especially to consumers and small firms, is lower and more expensive than it should be. Although voters are worrying mainly about corruption, crime and unemployment, the winner of the presidential election will have to consider how to make banking a more normal business. Indeed, that is already quietly happening.

The market's most striking features are the dominance of a few banks—strengthened in the past two years by the retreat of America's Citigroup, which sold its consumer business to Itaú, and Britain's HSBC, which sold to Bradesco—and the state's importance as both supplier and regulator of credit. Three private-sector lenders and three public ones—Banco do Brasil, of which the government owns 59%, Caixa Econômica Federal, a savings bank, and BNDES, a development bank—account for 82% of banking assets and 86% of loans. Regulations steer almost half of loans to favoured purposes, funded by private savings and the state. Interest rates on earmarked lending average 8.9%, according to the central bank. On the unrestricted remainder, they can be sky-high. They aver-

Also in this section

- 34 A bull market for Argentine beef
- 34 Cannabis on Canada's high street
- 35 Bello: Judging the judges

age 20.5% for companies and 45.8% for households. On personal loans, credit cards and overdrafts they run well into three figures.

The banks insist that wide spreads reflect not a cosy oligopoly but the high risk of default and the difficulty of pursuing debtors through slow, unsympathetic courts. Regulation also plays a part: a ban on overdraft fees inflates interest rates.

A recent study by the central bank suggests that the banks have a case. It ascribes 37% of spreads to the cost of default, 25% to administrative costs, 23% to taxes and only 15% to banks' margins. Spreads have narrowed as the Selic has declined. Yet the critics have a point, too. Tony Volpon, an economist at UBS and a former central banker, estimates that consumers pay around 20 percentage points more than they should, given the low Selic, declining defaults and banks' ROEs. Big companies' borrowing costs, by contrast, seem "about right".

That may be because corporations can shop around more easily than individuals. Years of high inflation have accustomed Brazilian consumers, by contrast, to buying goods in instalments, with hefty borrowing costs in effect built into prices.

Buying on credit is so dicey

Market forces and government actions are making banking more competitive. Entrants fired by digital technology and unencumbered by the costs of branch networks (including tight security) are trying to upset the incumbents. Banco Inter may clock up 1m customers for its fee-free account by September. Nubank has pushed on from credit cards into savings. Creditas is offering loans secured on houses and cars at far lower rates than on unsecured credit. (Most Brazilian homeowners, explains Creditas's boss, Sérgio Furio, have no mortgage, giving them room to borrow.) *Valor Econômico*, a newspaper, has

► reported that the central bank will restrict Itaú to a minority stake in XP Investimentos, a broker that has been a thorn in banks' sides which Itaú wants to buy.

The central bank is also trying to nudge down borrowing costs. Last year it obliged banks to switch customers who repeatedly roll over credit-card debt to cheaper loans. It recently eased some reserve requirements on banks.

The expansion of lending by state banks at ruinous, subsidised rates under Dilma Rousseff, president for five years until her impeachment in 2016, has been reversed under her successor, Michel Temer. BNDES has cut disbursements from 188bn reais in 2014 to just 71bn reais, and has introduced higher fixed and floating rates linked to the market. Dyogo Oliveira, its head, says it has switched lending from big companies to infrastructure and smaller firms. Banco do Brasil has cut 10,000 jobs and raised its ROE from a paltry 4% in late 2016 into double figures.

Removing subsidised lending and other distortions, argues Arthur Carvalho of Morgan Stanley, should have an extra, macroeconomic benefit. It should enable the Selic to be lower, other things being equal. The link between monetary policy and the interest rates paid by businesses and households would also be tighter. And if the next president is serious about getting Brazil's public finances under control, and long-term interest rates fall, investment and growth should at last pick up. A narrower gap between long- and short-term rates would squeeze banks' margins. But demand for credit would rise—and a stronger economy would mean faster sailing for all. ■

Argentina's beef exports

Bull market

BUENOS AIRES

The economy is on the verge of recession. But cattle ranchers are happy

COWS, sheep, pigs and llamas are the stars of ExpoRural, Argentina's biggest agricultural show, which took place on July 18th-29th. They made a racket in their stalls at a Buenos Aires showground as their owners brushed and vacuumed them to prepare for a barnyard-themed beauty contest. Outside, spectators filled a grandstand to watch Hereford bulls parade before a judge, the beasts' hooves sinking into the mud. Nearby, Toyota, Ford and other manufacturers showed off new 4x4 pickup trucks. House-sized combine harvesters loomed over the crowd.

Argentina's economy is in a slump and inflation is at 30% but ranchers are cheer-

ful. After a decade of decline, beef exports began recovering in 2015. Last year Argentina re-entered the list of the world's top ten beef exporters. Foreign sales surged by 60% in the first half of this year. That is because Mauricio Macri, Argentina's president since 2015, has ended the populist policies of his predecessors, which ground ranchers into mince.

In 2005 Argentina's then-president, Néstor Kirchner, imposed a 15% tax on beef exports in an effort to hold down inflation, which was around 12%, and to please voters. Each Argentine eats 59kg (129lb) of beef a year; only Uruguayans consume more. When the levy failed to control prices, Kirchner, who died in 2010, banned exports for 180 days. That worked, briefly. Between 2007 and 2011 ranchers sent more than 12m cows, a fifth of the herd, to the slaughterhouse, creating a glut. But then they stopped breeding cattle, or switched to smaller breeds that required less feed and produced less meat. Prices jumped.

Both producers and consumers suffered. Exports plunged, from 771,000 tonnes in 2005 to 199,000 tonnes in 2015. More than 15,000 farm workers lost their jobs. Some ranchers switched to soybeans (growing them, not eating tofu themselves); others moved to neighbouring Uruguay. Foreign leather firms, such as Italy's Italcuer, left the country. The third-largest exporter of beef in 2005, Argentina fell to number 11 by 2013, during the presidency of Kirchner's widow, Cristina Fernández de Kirchner. Even tiny Uruguay and Paraguay sold more.

Mr Macri is now repairing the damage. In his first week in office, in December 2015, he scrapped the export tax and floated the peso, making exports more competitive. He has opened new markets. In January this year China agreed to buy chilled Argentine beef for the first time. On July 23rd Mr Macri boasted in a tweet that the first shipment of Patagonian beef had left Argentina for Japan under an agreement reached in May. Argentina is on course to export 450,000 tonnes of beef this year, up from 312,000 in 2017.

"We are still very far from capacity," says Ulises Forte, head of Argentina's Beef Promotion Institute. Ranchers are rebuilding their herds. That takes time. With interest rates at 40%, borrowing to expand is expensive. Even so, ranchers are bullish. "The situation is improving day by day," says Mr Forte. Mr Macri, who is expected to run for re-election next year, hopes for a political payoff. "For every 100,000 tonnes more we export, we create 10,000 jobs," he says. To secure victory, he will have to spread the ranchers' good cheer to Argentines with other beefs. ■

Correction: Our Bello column on July 28th ("Damned is the peacemaker") said that former FARC guerrillas granted seats in Colombia's congress could not vote in the legislature. They can. Sorry.

Cannabis in Canada

The high street

OTTAWA

The shopping experience will vary a lot across the country

“RELAX. Unwind. Centre. Enhance.” These hippy-dippy blandishments will appear in big bright letters on government-owned shops in Nova Scotia, a province in Canada's north-east. They will add colour to outlets that otherwise resemble post offices. Business will begin on October 17th, when the sale of recreational cannabis will become legal across Canada. In the western province of Alberta, Tokyo Smoke, a private-sector firm, plans to open pot shops that are more like hipster cafés. In British Columbia illegal outlets have long masqueraded as “dispensaries”. Newly legal, some plan to kit themselves out like upmarket pharmacies.

Under Canada's scheme for legalising cannabis, the federal government will regulate production and set minimum standards for safety. Consumers must be 18 or older and may possess no more than 30 grams. But each of the ten provinces and three territories will decide how to distribute the stuff to 12m potential consumers (the number of Canadians who say they have indulged at least once) plus visitors.

In typically Canadian fashion, every province's legislation has its own “quirks”, says Michael Armstrong, a business professor at Brock University in Ontario. Five will make the sale of cannabis a provincial monopoly, as most provinces do for spirits. Government-run shops will take especially seriously their mission to safeguard public health and supplant the black market, says Rebecca Brown of Crowns Creative, an advertising agency that specialises in ►



Taking party parsley to parliament

► cannabis. Their design is thus likely to be "pleasant, but not too pleasant".

In Ontario, the most populous province, cannabis shops will keep the product out of sight. Customers will fill out order forms, which employees will execute in back rooms. (The province's new premier, Doug Ford, whose late brother was a crack-smoking mayor of Toronto, may have other ideas. He has mused about allowing sales in private shops.) New Brunswick, an eastern province, will require cannabis to be kept behind glass. In Nova Scotia it will be displayed behind a counter, except in one central store, where customers will be

able to sniff the weed.

Things will be livelier in the other areas, including Alberta, British Columbia and Manitoba, where the private sector will be allowed. In some cases it will compete with government-owned online and bricks-and-mortar retailers. Private shops will be freer to "pursue a delightful retail experience", says Ms Brown, though the delight will be curbed by a federal rule that cannabis be sold in plain packages bearing large, yellow labels and smaller red ones warning of health hazards. There will be room (just) for the logo of the producer.

Will Canadian tokers be able to get sup-

plies from neighbouring provinces with glitzier emporiums? Maybe not. Most provinces limit how much people can transport across borders. They may do the same for cannabis, says Kirk Tousaw, a lawyer. British Columbia already has a "ridiculous and unenforceable" requirement that anyone bringing cannabis from outside report to provincial authorities. "It boggles the mind that in 2018 you can't cross an imaginary line and buy 24 beers or 30 grams of cannabis without filling out a form or paying your own province," Mr Tousaw fumes. Canadians waving goodbye to prohibition will be tangled up in red tape. ■

Bello | Judging the judges

Why is strengthening the rule of law so difficult?

ONE morning this year, in a windowless modern courtroom, Jorge Alberto Rodríguez faced justice. He was accused of driving a stolen car with changed number plates. The judge began by explaining his rights to him. His lawyer then tried to trip up the policemen whom the prosecution had produced as witnesses. To no avail: after an adjournment to allow a missing defence witness to appear via video link, the judge found Mr Rodríguez guilty. That seemed to square with the evidence. Having been on bail for the nine months since his arrest, he was given a suspended jail sentence of five years and fined 15,000 pesos (\$800).

Such a trial could have taken place in a British magistrate's court. In fact, it was in Mexico City. The case was conducted under a radical judicial reform. This replaces an inquisitorial model, long the norm in Latin America, under which judges investigated and evidence was all in writing, with an Anglo-Saxon adversarial system and oral trials. The new system has taken more than a decade to roll out and is more expensive. But it has several advantages. Fewer defendants are remanded to overcrowded jails, cases are heard more quickly and the prosecution must publicly prove its case. Under the old system, judges relied on confessions (often extracted by torture).

Yet the reform is much criticised. Its introduction has coincided with a big rise in violence in Mexico. Although this was caused mainly by the fragmentation of criminal gangs and their move into new lines of business, many politicians blame the reform instead. Judges and prosecutors are insufficiently trained in the new ways and many are going back to "old practices", such as relying on confessions and shelving cases that need investigation, says Sandra Serrano of Flacso, a re-



search centre in Mexico City.

Mexico's experience is not unique. Since the 1990s the main focus of judicial reform in Latin America has been on criminal procedures. In all, 15 countries have made the switch to the adversarial system. This is an improvement, but not a panacea. It "hasn't reduced impunity, nor has it increased citizen trust in the system", writes Luis Pásara, a Peruvian legal scholar.

Many Latin American countries have reformed their economies, electoral systems and welfare states. But establishing the rule of law is much harder. Courts depend on many other actors, especially police and prosecutors, as well as politicians and citizens. Judicial reform nearly always involves trade-offs, especially between independence and accountability. And better procedures do not in themselves create better judges or justice.

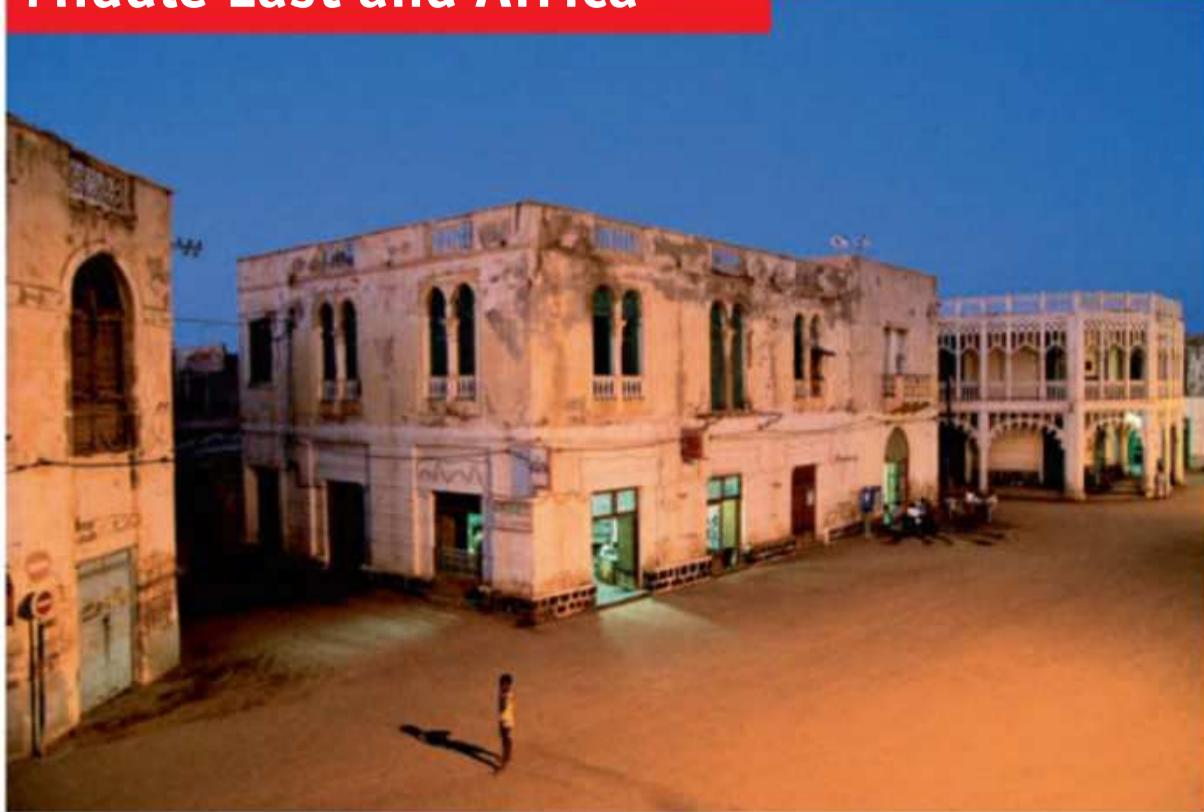
Take Peru, which made the procedural switch starting in 2004. While investigating a drug-trafficking ring in Callao, police found calls to judges on suspects' phones. That led to the exposure of "corruption, influence-peddling and the existence of organised networks inside the judicial sys-

tem", as a committee set up by Martín Vizcarra, the country's president, reported last month. One judge was taped apparently arranging to absolve a suspect of raping a 13-year-old girl; several had questionable contacts with politicians.

The president of Callao's high court is now in jail. The justice minister and the seven members of the National Judicial Council, which appoints judges, were fired, while the head of the judiciary and the public prosecutor resigned. The case confirmed what Peruvians had suspected. Their courts are beholden to politicians and people who can pay.

Yet the scandal presents an opportunity. Mr Vizcarra has proposed a referendum on the committee's recommendations to appoint the judicial council and judges through a public competition, and to set up a similarly chosen body to scrutinise the judiciary. A referendum will have to be approved by congress, most of whose members belong to parties (Popular Force and APRA) that are thought to have undue influence over the judiciary. "There are people with an interest in not changing the current system," the committee noted. Public anger may be strong enough to overcome resistance.

In Brazil's *Lava Jato* corruption cases, judges and prosecutors have brought many powerful figures to book, though they have occasionally committed excesses. Judicial reform in Chile, as well as Mexico, has produced some improvements. Peru has some honest judges and prosecutors. But public vigilance has to be sustained if a reformed judicial system is not to lapse into bad ways. The Spanish title of Mr Pásara's book translates as "An Impossible Reform". But he concludes that accumulated experience and a greater thirst for justice may mean the impossible is merely improbable.



Also in this section

- 37 Zimbabwe's bloody ballot
- 38 Syria's suffering refugees
- 38 Churches in Saudi Arabia
- 39 Debtors' prisons in Gaza

For daily analysis and debate on the Middle East and Africa, visit

Economist.com/world/middle-east-africa

Eritrea

A flicker of light in a prison state

ASMARA AND MASSAWA

A repressive dictatorship that enslaves its people ponders reform

ERTREA, one of Africa's newest countries, was born in battle. First it fought for 30 years to break away from Ethiopia, its bigger neighbour to the south, achieving that goal in 1993. In 1998 it was embroiled in another bloody war that cost perhaps 70,000 lives after it invaded Ethiopia over a trifling border dispute. A decade later it invaded tiny Djibouti over an argument about whether the border ran along the top or sides of some hills in the desert.

Reminders of its violent history are everywhere. In Asmara, the highland capital, posters and murals commemorate its war of independence. On the edge of the city lies a graveyard for tanks. In the Red Sea port town of Massawa stand the remains of an Italian-era bank battered by aerial bombardment three decades ago.

Eritrea signed a peace deal with Ethiopia in 2000, but the latter agreed to implement it only on July 8th, saying it would hand back the almost worthless strip of land that was disputed. In the intervening years Eritrea has remained a garrison state. "With the war everything stopped," says Samuel, a middle-aged Eritrean who grew up in Massawa but later moved to Ethiopia. When war broke out in 1998 he was sent home, along with some 70,000 of his compatriots. Ethiopians in Eritrea were sent the other way. Samuel was forced into military service. Twenty years later he is yet to be discharged.

He is one of hundreds of thousands of Eritreans who have either been conscripted

ed to the army or to a system of compulsory non-military service. This was originally set up by President Isaias Afwerki in 1995 to rebuild the newly independent country. Citizens were meant to serve for 18 months, after which they could get on with their lives. But in 2002 the government made the term indefinite, which the UN says amounts to mass enslavement.

Some conscripts serve in the army, though all are expected to head to the front if war breaks out. "We all know how to handle a gun," smiles Yared Ambaw, a 28-year-old accountant at a bar in the capital. Many do forced labour, such as building roads or dams. The luckier ones are sent to government departments. Many teachers, journalists, accountants and even hotel staff are conscripts paid pitiful salaries. Only married women with children, and the most sickly or well connected, can hope to be discharged early. The UN has said that female conscripts are routinely

raped by officers and forced to work as their servants. As in North Korea, the government locks in its citizens. Those subject to the draft cannot get passports or exit visas. Border guards have orders to shoot to kill—a power they often abuse to extort money or sex from would-be refugees.

Apart from two big mines that are joint ventures between the government and overseas firms, there has been almost no foreign investment. The government says this is because investors are frightened off by an arms embargo, yet its own policies are also to blame. There is almost no private sector and construction is carried out only by companies that belong to the ruling party and that are staffed by conscripts. Asmara is littered with boarded-up shops and empty factories, most of which date back decades to when Eritrea was one of the most industrialised parts of Africa. There are no ATMs and no mobile internet. Funerals are advertised on noticeboards so that bereaved families needn't make lots of calls from public telephone boxes (mobile phones, especially outside Asmara, remain rare). Teff, a staple grain, costs about four times as much as in Ethiopia.

Imports are restricted to control scarce hard currency. Shop shelves in Asmara are spartan. Electronics, such as old televisions, can cost hundreds of dollars because the price includes the cost of the seller's return flight to the Gulf. In Massawa, a city of pristine beaches that ought to be full of tourists, hotels and apartment complexes are empty and unfinished for want of building materials.

Peace with Ethiopia has brought hope. The government seems to be preparing to unwind national service, though it has not said so. New conscripts have been told they will serve only 18 months. Some of those who completed the programme this year have been sent home.

Meanwhile, the government has re-►



leased about 100 prisoners (again without any official statement), including some locked up for their faith. Eritrea allows only four denominations: Orthodox, Lutheran, Catholic and Sunni. Yet a Protestant Pentecostal preacher from Eritrea was recently seen proclaiming his faith loudly on a busy street in Asmara. Ethiopian music, also banned, is playing in public once again.

Senior officials have admitted to foreign diplomats that a great deal must now change. But opening up (officials are loth to speak of "reform") will be hard. The government is said to want to release its oldest conscripts, some of whom are in their 60s. But nobody knows for sure how many there are or whether the government will grant them exit visas. "In principle [reform] should be gradual," says Mehreteab Medhanie, a ruling-party official.

Mr Isaias, the only president since independence, appears to be gambling that he can bring Eritrea out of international isola-

tion without weakening his grip on power. On July 30th the former guerrilla chief restored ties with Somalia. There is little sign that he plans to introduce political reforms, such as implementing the constitution drawn up in 1997 but shelved with the outbreak of war. Eritrea has never had a national election and parliament has not met since 2002. Mr Isaias governs alone, surrounded by a clique of ageing veterans of the independence struggle. In a café on a tree-lined avenue in Asmara, a 40-year-old conscript points to a photograph of the president on his phone. "You see this man?" he asks. "That man is a dictator."

Almost everyone in Eritrea lost members of their family during its decades of conflict. "Everywhere you feel the weight of war," says Yemane Gebremeskel, the information minister. For decades the government used conflict and the threat posed by Ethiopia to justify its repressive policies. But now the war is over. ■

Three people were killed.

For Zimbabweans these scenes stirred memories of 2008, when the ruling elite rigged the presidential vote to prevent an MDC victory, before unleashing a campaign of murder and torture. A repeat on that scale seems unlikely. But the violence is a sign that "the New Dispensation", as Mr Mnangagwa calls his post-Mugabe regime, looks a lot like the old one.

Not that this should come as a surprise. For weeks local human-rights groups, and American and European observers, have warned that Zanu-PF was again trying to rig an election. An hour or so before violence broke out, Elmar Brok, the chief EU observer, listed the ways in which Zanu-PF had sought to sway the vote, from handing out food, seed and fertiliser in rural areas to threats of violence. "A truly level playing field has not yet been achieved," he noted.

Observers declined to estimate the influence of these practices on the final results. As *The Economist* went to press the Zimbabwe Electoral Commission had announced that Zanu-PF won 144 out of the 210 contested seats in the National Assembly (with three outstanding). Tallies from the separate presidential ballot had not been released.

These results raise a question. If victory seemed in sight, why did the government resort to violence? For some it is a sign that Mr Chamisa may be the rightful winner. For others it reflects growing divisions between the army and ruling party. The simplest answer might be that this is the natural reaction of a regime steeped in blood.

Whatever the reason, the consequences may be far-reaching. Although Western observers had already seemed hesitant to endorse the fairness of the election, those from the African Union and the Southern African Development Community appeared minded to give it a pass. But dead protesters make it hard for all but the blindest observer to say that this election shows that Zanu-PF has changed.

And it puts Mr Mnangagwa, should he triumph by foul means or fair, in something of a bind. An orderly election was supposed to be the first hurdle cleared on the path to getting loans from the IMF (which, in turn, would be a signal to other creditors). But even if his government now embarks upon IMF-friendly economic reforms, the chaos of the election makes it more difficult for America and the EU to support IMF loans.

Lining up to vote on July 30th, Munyaradzi Sibanda, a 35-year-old security guard from Harare, noted that his pay had been flat for eight years while prices in the shops kept rising. He cycles two hours to and from work every day to save on transport costs. He gets back just in time to see his children for ten minutes before they go to bed. "We just need change," he says. Sadly, there seems little on the way. ■

Zimbabwe's elections

A bloody ballot

HARARE

A violent response to a disputed election shows that Zimbabwe's rulers are still up to their old tricks

SO MUCH for a fresh start. The elections in Zimbabwe on July 30th were meant to usher in a new era for a country ruined by nearly four decades of misrule by Robert Mugabe. But the vote and its aftermath have showcased an all-too-familiar mix of chicanery and violence on the part of Zanu-PF, the ruling party, and its military backers. After toppling Mr Mugabe in a bloodless coup in November and promising a clean election, they have returned to form. And in doing so they have thrown into jeopardy their plans to end Zimbabwe's pariah status.

The week began peacefully enough. Under the gaze of observers from three continents, election day was the most orderly in recent memory. As soon as count-

ing began, however, the MDC Alliance, the main opposition bloc, complained that the vote was rigged. On August 1st thousands of its supporters flocked to downtown Harare, claiming that their leader, Nelson Chamisa, had won the presidential race.

Some protesters set fire to tyres and pulled down posters of President Emmerson Mnangagwa, the leader of Zanu-PF. Mr Chamisa has been irresponsibly claiming a colossal victory for weeks, whipping up his supporters. But the response by security forces was brutally disproportionate. At first police dispersed MDC supporters using water cannons and tear gas. Then, as armoured vehicles rolled into Harare and military helicopters whirred overhead, soldiers beat and shot those in the way.



The ruling party's new voter-outreach programme

Syria's refugees

The long road back

BEIRUT

Refugees have become a pawn in the struggle for Syria

FEW believed President Bashar al-Assad would survive the rebellion that swept his country seven years ago. But Syria's blood-soaked dictator is on the brink of defeating those who tried to topple him. The only rebels left are boxed into a corner of Syria's north-west, in Idlib province. Regime forces are mustering at its edge, having recently seized rebel-held areas near the border with Jordan and Israel, in the south. The fall of Idlib would sound the rebellion's death knell.

Trapped between rebels and the regime in Idlib are 2.6m civilians. More than half have already fled fighting in other parts of the country. The offensive in the south pushed hundreds of thousands of Syrians out of their homes. The UN warns that an assault on Idlib could displace 2m more. Turkish border guards are likely to shoot them (as they have done in the past) if they try to cross into Turkey.

Even as this potential exodus looms, there is increasing talk of sending home the 6m Syrians who have already fled to countries such as Turkey, Lebanon and Jordan (see map). Russia, which props up Mr Assad, wants to help 1.7m refugees, including 200,000 from Europe, go back in the near future. It sees their return as confirmation that the war is ending. Mr Assad has won and the country is stable. As part of the plan it has asked America and European countries to pay for Syria's reconstruction, which could cost as much as \$250bn, a sum Russia and the Assad regime cannot afford.

European powers have struggled to cope with the influx of Syrian refugees, which has fuelled populism. But they insist that they will not be blackmailed. They want to use reconstruction money as a bargaining chip to force Mr Assad to make concessions and set Syria on a less tyrannical path. The dictator, though, has no interest in negotiating over a war he is winning. America has not replied publicly to Russia's plan, but President Donald Trump seems to want little to do with Syria.

Russia has already begun reaching out to Jordan and Lebanon, which grumble about the difficulty of absorbing huge numbers of Syrian refugees. The Russian plan has gone down especially well in Lebanon, which has started to send refugees back. About 1,200 returned on July 28th, according to Syrian state television. Even Lebanese officials opposed to Mr Assad say they are willing to co-operate with Russia and the regime if it means more follow.

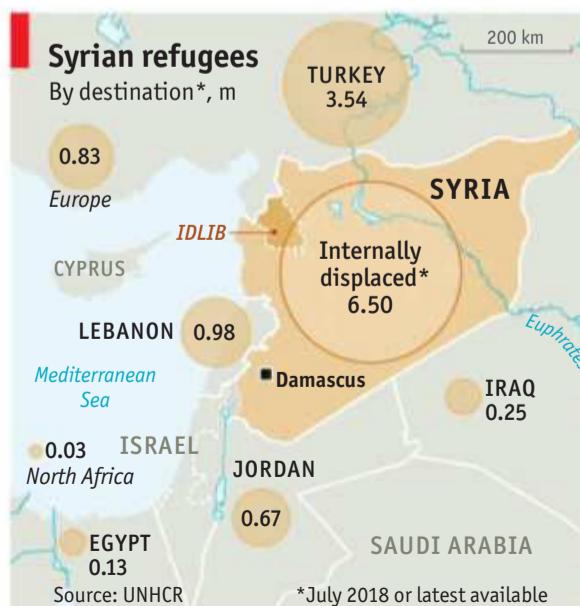


The courageous few

The UN says Syria is still too unsafe for most refugees to return. Nevertheless, it is ramping up support for those coming back. It has opened nearly 100 centres to provide handouts, such as plastic sheeting for war-damaged homes. If the trickle of returning refugees turns into a flow, the West may feel increasing pressure to help rebuild their houses, schools and hospitals.

Mr Assad says refugees, especially businessmen, are welcome to return. But he seems in no rush to take back many of them. Most are Sunnis, who were once a large majority in Syria—and the backbone of the rebellion. Mr Assad, who is Alawite (an esoteric offshoot of Shia Islam), says Syria has "won a healthier and more homogenous society". Refugees must obtain permission from the security services to return. Thousands have applied; only a few have been allowed back.

Mr Assad is using reconstruction to punish refugees and reward loyalists. He is reluctant to take money from the West, which would have strings attached. Instead he takes from his people. A decree, called Law 10, allows the regime to grab property from Syrians unless they can prove their ownership—hard for those who have fled. Refugees can designate family members in Syria to represent



them, but they must obtain a certificate of good conduct from the police. Anyone with ties to the opposition is unlikely to get one. Many Sunni homes and shops have already been given to regime loyalists.

There are plenty of other reasons why refugees are staying away. Returning men face military conscription. Some have been arrested and tortured for alleged links to the rebels. Neighbourhoods are littered with mines and unexploded bombs. Millions of homes have been flattened or damaged in the fighting.

But Mr Assad's policies, such as Law 10, also act as a magnet. Many refugees want to claim their assets before it is too late. Others fear that if they don't go back soon, they may be kept out for ever. And as life in refugee camps grows more miserable, some are choosing to return. Back home, though, their fate is uncertain. "My husband went back to make sure our house wasn't sold," says Sara al-Hussein, a refugee in Lebanon. "He's now living in a tent in a camp for displaced people. There is no future for us, not here and not in Syria." ■

Saudi Arabia

Hosannahs in the sand?

JUBAIL

The kingdom may be about to relax its ban on Christian churches

FOR a generation the Saudi antiquities authority has kept it under wraps. The ruins remain out of bounds behind metal gates and wire fencing. A guard shoos the curious away with threats of arrest. But if independent studies are correct, tucked in the dunes and palms near the eastern oil-fields lies a 7th-century monastery, the existence of which suggests that Islam once tolerated church-building in Arabia.

Muhammad bin Salman, the modernising crown prince, has defied clerics by allowing cinemas, open-air pop concerts and even female drivers in his puritanical kingdom. But approving churches for the 1.4m Christians in Saudi Arabia risks breaking one taboo too many. "Elsewhere it's no problem, but two *dins*, or religions, have no place in the Arabian peninsula," says a senior prince, reciting a purported saying of the Prophet Muhammad. Churches were expunged by the first community of Muslims 14 centuries ago, he insists.

Excavation at Jubail and other sites along the eastern coast suggests otherwise. Chroniclers record the existence of a synod in a diocese called Beit Qatrane, near Jubail, in 676AD, more than 40 years after the Prophet's death. Moreover, the peninsula's six other countries all have churches. Qatar, which follows the same Wahhabi

► school of Islam as Saudi Arabia, let one be built a decade ago. Bahrain did so in 1906. This year it broke ground on Our Lady of Arabia, a new cathedral.

Saudi exceptionalism matters because the kingdom is home to Islam's holiest sites and is the prime propagator of the faith. In October Prince Muhammad said he wanted Saudi Arabia to be "open to all religions, traditions and people around the globe". But off the Saudi coast in Bahrain, Camillo Ballin, the Catholic bishop of Northern Arabia, complains that nothing has changed for Saudi Arabia's Christians. Private prayer is tolerated, but the public display of Christian symbols is not. Communion in a country that bans wine is problematic. Priests sneak in as cooks or mechanics to tend to their flocks.

The bishop's website likens clandestine prayer meetings to the tribulations of early Christians under the Roman empire. In the wing of a foreign embassy in the Saudi capital, Riyadh, next to the bar, a table covered in black cloth serves as the altar. A priest raises a bible and pronounces the sacrament. A packed multinational congregation sings the Gloria. "For your sufferings you will be saved," incants the priest.

Some Saudi theologians call for a rethink. They insist that the Prophet's prohibition against two *dins* has been mistranslated (*din* means religious authority, not religion) and claim he never intended the ban on non-Muslim worship to cover the entire peninsula. His Declaration of Medina, a treaty providing for coexistence with Jews, "could yet be our model", says an official at the Islamic affairs ministry.

Abdullah, the previous Saudi king, opened an interfaith centre, but located it in far-off Vienna. More courageously, Prince Muhammad has hosted Christian clergymen at home. Saudi media have run footage of the Maronite patriarch and a papal emissary, Cardinal Jean-Louis Tauran, dressed in full religious regalia, crucifixes included, meeting the king. A decree stripping the religious police of their powers to arrest gives sanctuary to Christians who stage large prayer meetings at home. Bigoted preachers have been removed from the airwaves and injunctions to fight the unbelievers deleted from primary-school textbooks. The opening of a papal legation and construction of a church, predicts a royal adviser, are only a matter of time. One potential venue is Neom, a planned city in the far north-west, which could be declared outside the Arabian peninsula.

Much hangs on the whim of Prince Muhammad. His jailing of critics has curbed dissent. The chief mufti, who called for an end to church-building on the peninsula after Kuwait built one in 2012, judiciously holds his tongue. But suppression could provoke a backlash. "Toleration is more palatable when applied tolerantly," says a nervous Saudi author. ■

The Palestinians

From bankrupt to banged up

NUSEIRAT

Other countries abolished debtors' prisons long ago. In Gaza, they are full

ZIAD AL-ZAYYAN traded his home for his freedom. For years he ran a profitable business importing ceramic tiles to Gaza. In 2016 he took out a loan to pay for an order worth 80,000 shekels (\$20,830). But in a besieged territory with 43% unemployment, fewer and fewer people can afford to fix up their homes. Mr Zayyan could not find any customers for his last order. Desperate to pay off his creditors, he sold his flat in Nuseirat, a refugee camp south of Gaza City. He got \$17,000 for it, 23% less than what he paid three years earlier. "All of that money went to cover the loan," he says.

His alternative was jail. Most countries have abolished debtors' prisons. Palestine should have, too. It signed a UN treaty that forbids them. But they still exist in Gaza, which has been ruled since 2007 by Hamas, a militant Islamist group. Israel and Egypt imposed a blockade on the territory after it took power. Last year the Palestinian Authority (PA), which governs the West Bank, added its own sanctions to press Hamas into ceding control. The PA has cut public-sector pay in Gaza by over 40% and forced thousands of civil servants into retirement.

The economy, stagnant for a decade, has gone into freefall. Last year Gazans bounced cheques worth more than 400m shekels, an 80% increase over 2016. More than 42,000 people were arrested for falling behind on their debts. Issa Habash, a grocer in Nuseirat, estimates that two-thirds of his customers owe him money. Hoping to cut back on the practice, he no longer sells full-sized contain-

ers of many staples. Instead he offers tiny bottles of vegetable oil and sachets of coffee. "They cost only one shekel, and people still put them in the book," Mr Habash says, gesturing to his ledger.

Raed al-Shawa supplies gas to 1,500 customers in northern Gaza. His residential clients have always struggled to pay. Last year, though, even factories and restaurants started bouncing cheques. He stopped accepting them and now demands cash up front. "We lost 40% of our usual sales," he says. That means he cannot always pay his 22 employees on time. He worries they will fall behind on their own debts, deepening the cycle.

The unluckiest find themselves in front of Muhammad Nofal, one of two financial judges in Gaza City. His court handles up to 40 cases each day. Not all of the guilty go to jail; some work out deferments or payment plans. In March the public prosecutor offered a one-month amnesty for debtors to settle up. Still, Mr Nofal has sent hundreds to jail over the past year for terms ranging from months to years, depending on the debt.

Mr Zayyan wants to wind down his business, but no one wants to buy his inventory or his commercial property. He spends his days idling in cafés, occasionally selling small batches of his remaining tiles. No longer a homeowner, he pays 1,000 shekels a month for a rented apartment. His savings are running out and he fears he will soon fall behind on the rent. "I'm reaching the breaking point," he says. "I can't continue. But I can't leave, either."



In the red? Free bed



Pakistan's new prime minister

A man, no plan

ISLAMABAD

How will Imran Khan govern?

A WEEK after a general election rocked by suspicions of fraud, the dust is beginning to settle. It looks all but certain that Imran Khan, a former captain of Pakistan's cricket team, will be sworn in as the country's next prime minister. His party, Pakistan Tehreek-e-Insaf (PTI), will dominate the legislature. The outgoing Pakistan Muslim League-Nawaz (PML-N) and the Pakistan Peoples Party cried foul, noting that the army had come out strongly in Mr Khan's favour, muzzling the press and sending security agents to meddle in polling stations. But the fact that these two ancient rivals are now making common cause as the loyal opposition suggests that they accept the result. Few Pakistanis want endless street protests and political turmoil. So the democratic show rolls on. For the second time in Pakistani history, power has been democratically transferred.

For over two decades Mr Khan has railed against a sleazy system of hereditary politicians and patronage networks. Yet this is the first time the PTI has shown a broadly national appeal in a country of 207m. Its 4m more votes than the PML-N represent a notable popular victory, one only partly undermined by vote-rigging allegations. Most remarkable is the PTI's win in Karachi, a city of powerful local machines and thuggish street politics. The PTI may yet wrest Punjab, the country's bread basket and most populous province, from

the PML-N. That would cap a remarkable fall for the Sharif brothers: Nawaz, the "Lion of Punjab", who was prime minister until last year and is now in jail facing corruption charges, and Shahbaz, Punjab's former chief minister.

Yes, he Khan

Mr Khan, who now commands about 115 seats in the National Assembly, still needs a handful of allies—Independents and smaller parties—in order to govern. The PTI's chief bankroller, Jahangir Tareen, has been flattering independents by flying them in to Islamabad, the capital, on his private jet. The grubby promises to them are the kind of thing Mr Khan used to decry. His wooing of the Muttahida Qaumi Movement, or MQM, the most unsavoury of Karachi's parties, is making some PTI leaders gag. But at least it means that Mr Khan does not need radical Islamist parties to form a governing coalition. Before the election, he pandered to zealots.

Meanwhile, over the economy there is no time to lose. Not for the first time, an incoming government faces a balance-of-payments crisis. The current-account deficit has widened and the currency is sliding. Pakistan imports three-quarters of all its energy needs. Yet foreign-exchange reserves are down to just \$9bn—barely two months' import cover. An IMF bail-out, of perhaps \$12bn, looks all but inevitable. Ne-

Also in this section

- 41 Counting aliens in Assam
- 41 Rebellion in the Philippines
- 42 Slumming it in South Korea
- 43 Banyan: Japan's painful work habits

For daily analysis and debate on Asia, visit
Economist.com/asia

gotiating one will require finesse. Pakistan is in hock to China which, through a ballyhooed China-Pakistan Economic Corridor, has promised \$62bn of infrastructure spending. This week America's secretary of state, Mike Pompeo, insisted that his country would block any IMF bail-out that profited China. The task of stitching a deal together will fall to Asad Umar, Mr Khan's probable finance minister. He is a good choice: the former head of Engro, the country's biggest private conglomerate, Mr Umar is reform-minded and admired.

The terms of an IMF deal will bring a populist party down to earth—so much for Mr Khan's wild promises of an "Islamic welfare state". The next challenge is the electricity sector. In office, the PML-N did much to fix Pakistan's notorious blackouts, helped by China building new capacity. But a tangle of debts among state generators, energy suppliers and banks has been exacerbated by theft from the grid. This can be resolved by reducing subsidies, raising energy taxes and recapitalising state entities. Mr Khan has long bemoaned Pakistan's institutional decay. Renewal starts with fixing the electricity mess.

Then come security and foreign policy. Islamist violence marred the election and is a constant threat to Pakistan. Meanwhile, the regional situation grows trickier, with rivalry between America and China, and China and India. That comes on top of rocky relations with America itself, the festering sore of war-torn Afghanistan to the north-west, and Pakistan's age-old and bitter animosity towards India.

Mr Khan would seem ill-suited for these challenges. He has been more critical of America, especially over its use of drones to kill jihadists, than of the extremists themselves. And he is pally with an army that is the chief obstacle to better re-



lations with India, the sworn enemy.

There is room for surprises, though. Under Nawaz Sharif, the civilian government and the army clashed. The generals distrusted, and then thwarted, Mr Sharif's overtures to his Indian counterpart, Narendra Modi. Relations with India, they make it clear, are their remit. But perhaps, says Sehar Tariq of the United States Institute of Peace, "harmony" between civilian rulers and the army (ie, civilian subservience) could "reap dividends" over India. High-level exchanges have recently taken place between the two countries' armed forces. Pakistan's army chief, General Qamar

Bajwa, is relatively doveish towards India, acknowledging that home-grown jihadism is a far greater threat to Pakistan. Pakistan, via the generals, may yet find the will to seek better Indian ties.

One day, though, Mr Khan will surely clash with the generals. He speaks of opening the border with Afghanistan, an idea at odds with the 2,300km-long fence the army wants to build. And he wants to spend heavily on health and education, money which can only be found by crimping the armed forces' budget. Farooq Tirmizi, an analyst, predicts a fight that will come down to "guns versus textbooks".

But that is for the future. For now, Mr Khan, who has seldom attended parliamentary sessions and who has described the assembly as "the most boring place on earth", must find a sense of dedication, detail and compromise that has evaded him till now. He must learn to work with a political class he has only slammed. And he must gently let down his most enthusiastic supporters from the irresponsible highs he generated for them—for instance, by promising to end corruption within 90 days. It will require dogged strength, which he has in abundance, and humility—which, equally, he lacks. Over to the captain. ■

A controversial register of citizens in north-east India

We are Assamese if you please

DELHI

Some 4m worry whether they are suddenly about to become stateless

GIVEN the problem, it seemed a reasonable solution. The north-eastern state of Assam is among the most ethnically, linguistically, religiously and topographically mixed bits of India. It is also the most combustible. In the 1970s and 1980s thousands died in unrest, mostly (but by no means entirely) sparked by fears of the biggest group, Assamese-speaking Hindus, of being swamped by an influx of Bengali-speakers. An impoverished country, Bangladesh, had sprung up next door in 1971, pushing both persecuted Hindus and Muslim migrants over a border so porous that 162 bubbles of foreign territory, some no bigger than a few rice paddies, had been left trapped on either side. So why not, the state's leaders suggested in 2005, do a tally to sort out Assam natives from recent intruders, and send anyone who came after 1971 packing?

Fast-forward to July 30th, when the state government released a draft of its National Register of Citizens. The much-delayed count, undertaken in earnest only in the past three years, suggests that some 4m out of the state's 33m people, most of whom are Bengali-speaking Muslims, have failed to prove they are pukka Assamese. The prospect of so many being made stateless, and possibly expelled, has understandably aroused a furore.

Opposition politicians decry the exercise. They say the ruling Bharatiya Janata Party (BJP, which reigns in Assam as well as in Delhi, India's capital) has cynically designed it to rally its Hindu-nationalist base in advance of next year's general election. Mamata Banerjee, chief minister of neighbouring West Bengal state, warns of "a civil war, a bloodbath". While cooler heads in the BJP note that the count was started under previous

governments, hotter ones accuse the opposition of being unpatriotic and playing "vote-bank politics" with Muslims, who make up over a third of Assam's population. One BJP legislator from far-off southern India declared that if Bangladeshi or Rohingya immigrants (the latter fleeing persecution in Myanmar) do not leave, they should be shot.

Assam remains calm, for now. Local leaders insist the register is just a draft, and that anyone may challenge their status. As it is, many have spent weeks and months, as well as fortunes in legal fees, to dig up the dusty old documents needed to prove ancestral links to the state—if these even exist. Those left off the current list include officers in the Indian army, one from a pair of twins, tens of thousands of women from families too poor, unlettered or conservative to have considered registering their births or marriages, and several serving or former members of Assam's local legislature—including one from the BJP.



Counting who counts and who doesn't

Rebellion in the Philippines

Murder in Mindanao

MANILA

A bombing tells peacemakers to make haste

IT DID not take long for Islamic State (is) to claim responsibility for a bomb on the island of Basilan, part of the southern region of Mindanao in the Philippines, that killed nine soldiers and civilian bystanders, along with the driver of the van the bomb was carried in. The army suspects the work of Abu Sayyaf, a brutal kidnapping-for-ransom gang from Basilan and the neighbouring island of Jolo which these days claims allegiance to is.

The attack, on July 31st, highlighted the dangers of dragging out a slow, stumbling peace process that had made a leap forward just days before, when President Rodrigo Duterte enacted the Bangsamoro Organic Law. The law is key to ending half a century of rebellion by Filipino Muslim separatists in Mindanao which has cost tens of thousands of lives. It is surely key, too, to ending the chaos in which jihadists such as is thrive.

Congress in Manila, the capital, had taken years to pass the new law, which provides for greater autonomy for the homeland of the Bangsamoro, Muslims who are in a majority in their part of Mindanao (which is predominantly Christian, like the country). In return, the main rebel group, the Moro Islamic Liberation Front (MILF), has dropped its demand for Bangsamoro independence. Greater autonomy was promised in a peace agreement signed by the government with the MILF in 2014.

The armed campaign for Bangsamoro independence began in 1969. The 2014 agreement was the culmination of decades of on-and-off negotiations between the government and Muslim separatist rebels, first the Moro National Liberation Front and then its less secular offshoot, the MILF. During those years, war-torn, im-



► impoverished Mindanao spawned a plethora of armed groups: some Muslim separatists, some communists, some simply violent criminals. Jihadists took advantage of the general lawlessness to recruit fighters to their cause.

After the peace agreement was signed, Congress shied away from passing the legislation it entailed when current and former MILF fighters killed 44 paramilitary policemen operating against jihadists. When Mr Duterte, whose power base is in Davao, the largest metropolitan region in Mindanao, became president in 2016, he said he was determined to complete the peace process.

Yet Congress was still slow to pass the legislation, fearful lest it turn out to contravene the country's constitution. In 2008 the Supreme Court had declared a previous peace agreement unconstitutional, so infuriating one faction of the MILF that it broke away. The splinter group, the Bangsamoro Islamic Freedom Fighters (BIFF), later pledged allegiance to Islamic State.

The Bangsamoro Organic Law may yet be challenged in court. That is one reason (admittedly of several) why Mr Duterte has called for the constitution to be rewritten to turn the Philippines from a unitary state into a federation.

A bloody attempt last year by groups, including Filipino adherents of IS, to capture and hold the city of Marawi was crushed when the army laid siege for months, destroying the city to save it. In that siege, one notable Abu Sayyaf leader, Isnilon Hapilon, was killed. Yet BIFF guerrillas and Abu Sayyaf terrorists remain active in the south, as the latest bombing in Basilan showed. Not just the government but also the MILF chairman, Al-Hajj Murad Ebrahim, believe peace and economic development in Mindanao will defeat the jihadists by drying up their sources of recruits. The battle for Marawi, and now this latest bombing, are warnings that jihadists are lurking, ready to pounce unless Mr Murad and Mr Duterte make haste to end the separatist conflict. ■

Slumming it in South Korea

Fan fare for the common man

SEOUL

The mayor of Seoul sleeps in a shack

“**M**Y WIFE can barely contain her happiness,” Park Won-soon, the mayor of Seoul, South Korea’s capital, wrote on his Facebook page on July 27th. The occasion for her ecstasy was that an electric fan had arrived in the household.

In the circumstances, the excitement was understandable. Five days earlier the couple had moved into a rooftop shack in Samyang-dong, a dilapidated neighbourhood on the northern fringes of the megalopolis. The shack is not air-conditioned, and in the sweltering recent weather—South Korea’s hottest on record—temperatures inside topped 50°C. Plus, the fan came with a message of solidarity from the president, Moon Jae-in, a political ally.

Mr Park, who in June was elected to his third term as mayor, says that by spending a month in Samyang-dong he will learn first-hand about the difficulties that Seoul’s poorer residents face. The stunt has earned him a fair amount of mockery. When City Hall workers delivered ready-made rice porridge to him over the weekend, onlookers questioned the seriousness of Mr Park’s quest to experience “ordinary life”. (City Hall said the porridge was for a breakfast meeting with neighbours.) Ha Tae-kyung, from the conservative opposition, described the move to the roof as a “comedy”. If the mayor really wanted to know about ordinary life, he said, “he should live in the neighbourhood for his entire term.”

Locals queue up at all hours outside the mayor’s temporary home to air their

grievances. Yet some are sympathetic. “It’s a good thing he’s doing,” says one neighbour playing in the street with her little grandson. “Why would I complain about someone trying to understand more about our lives?”

The mayor’s stint of living like common folk is a reminder that beyond the city’s glitzy centre many Seoulites still live in flimsy, barely legal dwellings similar to Mr Park’s temporary lodging. These people cannot afford the capital’s sky-high property prices. In many areas, particularly north of the Han river, houses are poorly equipped for Seoul’s steamy summers and biting winters.

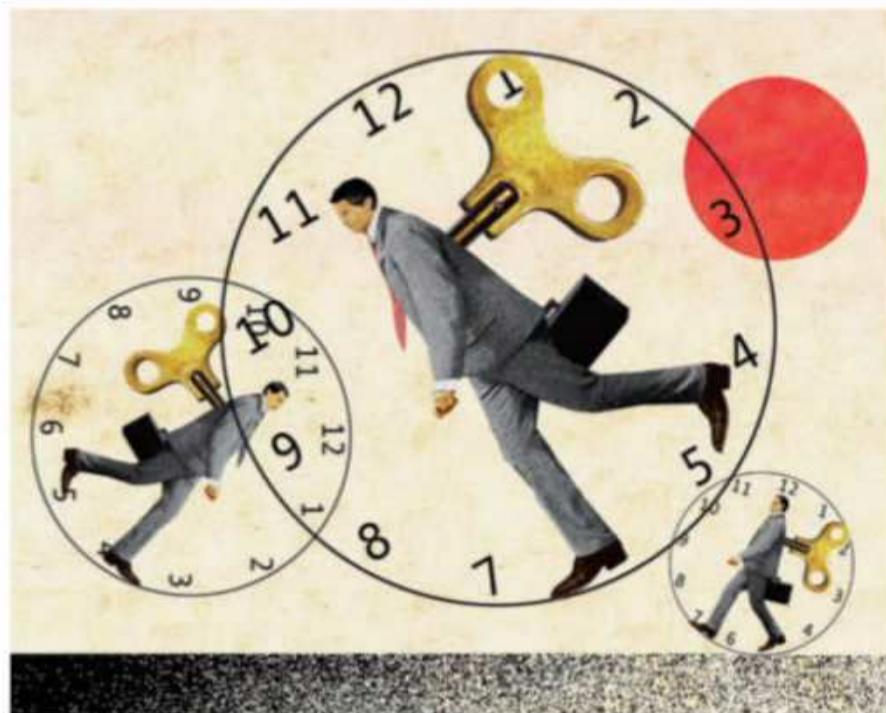
For a long time, the city’s approach was to raze such quarters and build brutally utilitarian tower blocks in their place, says Rieh Sun-young, an architecture professor at the University of Seoul. Yet such flats are still expensive and do not always meet the needs of the people they displace—for instance, they are too big for today’s smaller families, couples or young singles wishing to live alone. Ms Rieh hopes that the mayor’s time on the roof will help him develop a more nuanced approach to urban regeneration. Widening streets, refurbishing houses and improving local transport links, libraries and child care would do much more for deprived areas than simply razing them to the ground.

Whether he learns any rooftop lessons or not, Mr Park leaves his Samyang-dong shack later this month, to return to his air-conditioned apartment.



Banyan | When everyone is the last one out

No one is happy with Japan's workstyle, but it is proving hard to change



YOYOSHISA AONO could be a model for Japanese executives. The offices of Cybozu, his software company, would appear staid were they in Palo Alto. But they are radical for central Tokyo, where each day waves of black-suited Stakhanovites make their way to grimly utilitarian offices. Slap-bang in the centre of Cybozu's headquarters are stuffed-toy monkeys and parrots. Staff in casual wear and trainers perch on stools sipping coffee and tapping away at laptops. Mr Aono himself leaves work at 4.30pm to see his three children. He takes paternity leave, unlike most Japanese fathers. Good lord, he even goes on holiday.

To many Japanese, Mr Aono's work style will seem extreme. To many in the West, it is Japan's long working hours that are outlandish. Japanese work notoriously hard—to which the abundance of comatose passengers on the commuter trains attests. Many men work so late, or get so sozzled after work to relieve stress, that they don't make it home. Hence the ease with which, early the next morning, you can buy a cheap shirt and tie in the convenience stores in the business districts of Nagoya, Osaka and the capital.

Twelve-hour days are common. Holidays are stingy—just ten days a year when you start out at work—yet Japanese workers, on average, take only half their due. Japan leads the world in paternity leave—up to a year. Yet barely 5% of men take advantage of it, and then usually for just a few days. Japan has given the world the term *karoshi*, or death by overwork.

Japan's work system dates to the end of the second world war, when defeated soldiers swapped uniforms for suits. Salarymen became the shock battalions of Japan's economic miracle, rebuilding the country during an era of turbocharged growth. Companies needed lots of male workers quickly (women worked as secretaries and then became homemakers once they had found a husband—often at work). In return for absolute loyalty, workers at big companies got regular wage rises, generous benefits and the guarantee of employment for life. Company ties were sometimes stronger than family ones.

The model now holds Japan back. It is miserable for male workers, especially as companies no longer make the money to offer new employees the same benefits and guarantees. It is even worse for women. Those who succeed in a male-dominated

workplace risk all if they have children, after which it is hard to pick up careers again. A large number of women don't return to work at all. As for Japan's young, many opt out of corporate life to open or staff boutiques, cafés and the like. There they accept low pay rather than toil in bleak offices. None of this helps companies either—Japan has the lowest productivity of the G7.

Government and businesses increasingly acknowledge a problem, but struggle to deal with it. It is telling that "Cool Biz", a ballyhooed campaign launched in 2005 to get people to take off ties and jackets at work, was motivated not by a need to please workers but to save on summer air-conditioning. These days, bureaucrats dress down during the sweltering summer months, but employees at banks and the like rarely dare.

Pressure to create a better work environment is growing. After a young female employee at Dentsu, Japan's advertising behemoth, committed suicide in 2015, a court ruled that it was because of *karoshi*. That was the cause of much hand-wringing. But more broadly, at a time when an expanding economy and a declining population are creating severe labour shortages, companies with a reputation for grinding work struggle to attract staff. One woman, a senior executive who barely saw her children as she climbed the corporate ladder, wonders whether the sacrifices she made were worth it.

Some companies really are trying to change. A consultant on matters of employee well-being says she has never been so much in demand. Panasonic, which in 1965 was the first Japanese company to introduce a five-day week, now lets people work from home and wear jeans in the office. Yet powerful instincts of conformity and self-sacrifice still mark Japanese society. Panasonic admits that few are willing to leave work early or wear jeans before other colleagues do the same first. People in authority need to lead by example. Tokyo's governor, Yuriko Koike, shuts her offices each evening at 8pm; staff have no choice but to leave. By contrast, after weeks of debating radical change, the Diet (parliament) recently passed greatly watered-down legislation. Overtime hours were capped at an exhausting 100 hours a month.

Work harder, at reform

Japanese continue to work long hours because, almost without exception, big companies continue to judge employees by input not output. They base promotion and pay not on merit, but on age and years at the company. It is almost impossible, by law, to fire incompetent staff hired on permanent contracts.

Only a drastic overhaul of the labour system will do, not tinkering at the edges. Above all, the law needs to make it easier to hire and—especially—fire, so that people move jobs much more than now. That would shake up the relationship between employers and employees. Productivity would rise. Workplaces would be more diverse. Women would have many more chances. But so, too, would men: for instance, fathers could play a greater part in bringing up their offspring. With better work prospects, couples might even have more babies, an obsession with Japanese demographers worrying about the country's falling population.

The time is ripe for change. The economy is in relatively good shape. Japanese companies are keen to adapt to be competitive abroad. Yet too many of Japan's politicians and corporate titans are male, hidebound and timid. Many workers are undemanding. Conformism remains powerful, at work more than anywhere. Change is coming, but it is coming all too slowly. ■



Trouble in Tianjin

Where are the people?

TIANJIN

What used to be China's fastest-growing region is now its slowest

TIANJIN, a northern mega-city, has produced some of China's wittiest comedians. It is a good thing that its 15m residents have a sense of humour. Their hometown was, at points over the past decade, the fastest-growing of China's 31 provincial-level regions. Since the beginning of last year it has been the slowest (see chart). Businesses joke that the sole part of the local economy that is expanding these days is the value of assets seized from corrupt officials. The city's sharp deceleration serves as a stress test of China's economic problems, and as a warning of the difficulty in fixing them.

Other areas of China are also grappling with subdued growth. Commodity-producing regions have struggled to adapt to a modernising economy, as has the rust-belt north-east. But Tianjin stands out as a place that should be doing better. It boasts a busy port and good universities. A skilled manufacturing hub, it has attracted firms from Airbus to Motorola. Just half an hour from Beijing by train, it is well situated.

The problem is that the city's planners got far ahead of themselves. They built a big new financial district, which they billed as China's Manhattan, in the Binhai district, on the city's far-east side. Nearly 70% of offices there are vacant, according to Jones Lang LaSalle, a property-services

firm. That flatters the reality. One whole floor of the New Finance Building, a glistening complex, has been converted into "escape rooms" for adventure games. "The buildings are great," Zhang Junkai, a port worker who lives nearby, says with a wry smile. "It's just that we don't have enough people in them."

Some 60km away, on the city's western fringes, the waste is even more striking. A private developer wanted to create a high-tech zone, anchored by the world's fifth-tallest skyscraper. Construction all but

Also in this section

45 Greyhound racing in Macau

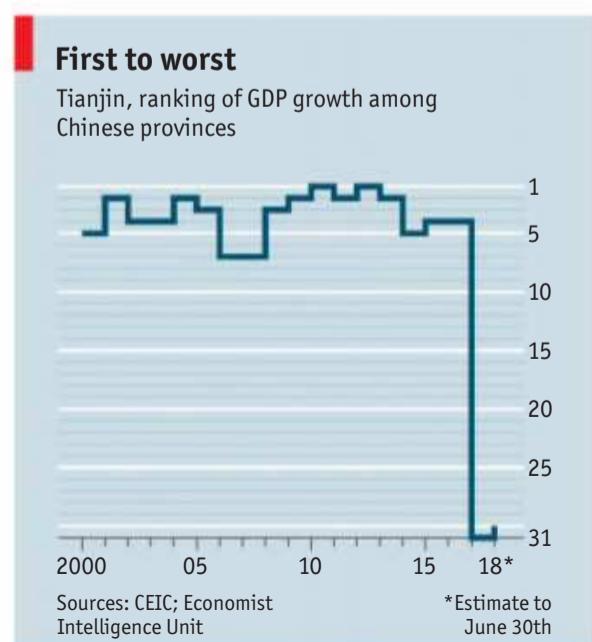
For daily analysis and debate on China, visit
Economist.com/china

stopped a few years ago. The skyscraper's skeleton is nearly 600 metres tall, and surrounded by a dozen other abandoned building sites, which are a short drive from a fledgling polo club, itself ringed by empty luxury residences.

Corruption fuelled the excesses. In the city centre, Zhao Jin, a property magnate, paid off bureaucrats to flout zoning rules. He had permission to build three towers of no more than 35 storeys, but instead went for 66 storeys. He and the bureaucrats (some of them, anyway) are now in jail; his development, an unfinished eyesore, was listed for demolition. In another case, at the port, managers of a chemical warehouse exploited connections to pass inspections on matters from fire safety to chemicals handling. In August 2015 a massive explosion obliterated the warehouse and the surrounding area, killing 173.

The deadly blast seems to have marked a turning point. Huang Xingguo, mayor since 2007, was jailed last year for corruption. Li Hongzhong, Tianjin's new Communist Party boss, has presided over a clean-up. Corruption investigations in the first half of this year have already exceeded the total for 2015. The government has also changed its economic course. It has tightened its belt, budgeting nearly 15% less spending this year. Once-busy building sites have attracted scavengers. Ads for metal-recycling services are plastered on construction walls in the high-tech zone.

Tianjin, along with a handful of other Chinese regions, has admitted that its economic record was grossly inflated. Binhai, which accounts for half the city's output, declared in January that its GDP was a third smaller than previously reported. Partly as a result of correcting for past fabrication, ►



► Tianjin's annual GDP growth has averaged just 3.5% since 2017, compared with 13.5% under Mr Huang, a precipitous drop.

Tianjin's woes are an extreme version of China's. Over the past decade cities have rushed to expand. Yang Weimin, a senior official, revealed this year that, based on electricity usage, China's housing vacancy rate is higher than Japan's, which stands at 13%. In downtown Tianjin that is almost palpable. Colonial buildings, dating to the 19th century, have been beautifully restored. Yet they are eerily quiet. "All the units have been sold, but few people have moved in," says a guard at the Tai'an Avenue luxury complex.

The question of whether Tianjin can recover, then, is of national salience. Coming clean about its problems is a good first step. But in two other ways, the Tianjin example is worrying. First, local officials appear willing to tolerate only a limited reckoning. Tianjin, like other parts of China, has relied on government-owned companies to pay for investments. Zhang Zhiwei, an economist with Deutsche Bank, has estimated that in Tianjin these companies only have enough revenue to cover about 40% of what they owe in interest, the third-worst ratio among China's provinces. Tianjin is, he says, a "pilot experiment" for how the government will resolve its debts.

The experiment is not going all that well. In May two city-owned developers flirted with defaults on loans that together were worth 700m yuan (\$103m). In both cases they conveniently came up with cash in the end. But some analysts saw that as a missed opportunity. In the absence of genuine defaults banks will go on lending to rotten state firms, knowing the government will always prop them up. "China hasn't killed off this implicit guarantee," Mr Zhang says.

Second, Tianjin shows that China's preferred solution to debt problems—growing out of them—is getting harder. As the economy slows, it takes longer to digest bad investments. Binhai is not a ghost city, but it is far from attaining critical mass. The train to Tianjin's centre is a tenth full during rush hour. The big excitement these days is that the Juilliard School, an American performing-arts conservatory, will open a campus in Binhai next year, its first such venture abroad. But it is also a marker of reduced ambitions. The Juilliard will occupy just one new building. Planners hoped that many more would house big firms by now.

The appeal of Tianjin for foreign investors has waned amid soaring labour costs. Its GDP per person has passed \$17,000, ten times higher than in the late 1990s, when manufacturing firms flocked to the city. Samsung, a South Korean electronics giant, once operated several factories in Tianjin. It has shifted its focus to Vietnam, where labour is much cheaper.

It does not help that Tianjin is also one

Greyhound racing in Macau

Bow-wow-ing out

Asia's last dog-racing track has closed

THE kennels reeked of excrement. The dogs inside looked weak. Many were suffering from visible injuries. Such was the scene that greeted Zoe Tang at the Canidrome, a greyhound-racing stadium in Macau, an autonomous region of China, on the morning of July 21st. The evening before, its billionaire boss had left behind all 533 race dogs owing to the expiry of the venue's operating concession, forcing the authorities to step in to mind them. Since then Ms Tang (pictured), who works for Anima, a local animal-welfare organisation, has been recruiting volunteers to help feed, walk and bathe the forsaken canines. Hundreds of people have turned up daily, far



But the rabbit got away

of China's most rapidly ageing cities. Nearly a quarter of those with local *hukou*, or residency permits, are more than 60 years old, up from a tenth in the 1980s. As pension and health-care costs rise, social-security provisions will consume nearly half of Tianjin's pared-down budget this year. Younger migrants have also started to drift away to faster-growing regions in China's interior. Tianjin lost 52,000 residents last year, its first such decline in five decades.

In May the city made a bold move to attract young professionals. It offered *hukous*, usually hard to obtain in big cities, to anyone under 40 with a university degree willing to live in Tianjin. In one day 300,000 people applied. With a Tianjin *hukou*, they could send children to local schools, a big enticement. But many applicants simply wanted to base their families in the city. So officials added a condition, requiring applicants to work there, too. Just

more than had been betting on the races.

The Canidrome is one of the last vestiges of a grittier, seedier Macau. The greyhound track opened in 1963 (after a false start in the 1930s), when Macau was a Portuguese colony, and drew crowds of day-trippers from Hong Kong. Owned by the family of Stanley Ho, who once enjoyed a stranglehold on local gambling concessions, it was the last place in Asia where punters could wager legally on dog racing. But in the new Macau, with its glitzy casinos, it had lost its lustre. Attendance dwindled to just dozens a day.

Animal-rights groups had urged the track be closed. They alleged that greyhounds were put down if they failed repeatedly to win races. In 2011 the head of Macau's animal-control division said that 30 dogs a month were being killed. Angela Leong, wife of Mr Ho, boss of the Canidrome and an elected lawmaker, denied any cruelty. She said her charges were the "happiest dogs in the world".

Macau's government had threatened to fine Ms Leong up to 100,000 patacas (\$12,330) for each abandoned greyhound. On July 27th she announced a plan to house them at a new air-conditioned facility. Anima agreed to run it. Ms Tang says the priority now is to find permanent homes for the pooches. About 700 prospective owners have filed applications, though she worries that some might spirit them to illegal tracks, or even dinner tables, elsewhere in China. Candidates will be scrutinised closely. Victory for the greyhounds is in sight at last.

5,800 applicants made the first cut.

There is one big wild card in Tianjin's future. The central government talks of unifying it with Beijing, to create a huge city cluster. If it truly did that, and moved some government functions from Beijing, Tianjin's office gluts could vanish, says Tin Sun of CBRE, an international property agency. So far it has taken only baby steps.

In the meantime Tianjin is trying to pick itself up. It is pitching itself to companies in Beijing as a location for back-offices. Tech firms, including Bytedance, a developer of popular apps, have based censorship teams in Tianjin. This is not the glitzy future of the city's dreams, but it pays the rent. On July 17th, when Tianjin officials reported a grim batch of economic data, they added a rallying cry: "we must summon the courage that it takes to roll a rock up a mountain." A worthy ambition, so long as they can avoid the fate of Sisyphus. ■



Saving the world order

Picking up the pieces

As the American-led, rules-based world order apparently fragments, coalitions of the like-minded are forming to help reinforce it

FOR the past four years senior officials from a group of leading democracies, calling themselves the “D10”, have quietly been meeting once or twice a year to discuss how to co-ordinate strategies to advance the liberal world order. Foreign ministry policy-planners and a few think-tank types would discuss responses to Russia, China, North Korea, Iran—but largely below the radar, so as not to be seen as a cabal of the “old West”. The idea has been to enhance co-operation among “a small number of strategically like-minded and highly capable states”, as Ash Jain, a former member of the State Department’s policy-planning staff, put it in a working paper in 2013.

But, at their next meeting, in Seoul in September, the D10 (America, Britain, France, Germany, Italy, Canada, Japan, Australia and South Korea, plus the European Union) will have a new agenda item: America’s global role. Whereas the main threat to the rules-based order used to come from outside the leading democracies, some now fear it comes from within.

President Donald Trump’s hostilities on trade, his attacks on the policies of NATO allies and ditching of international agreements, such as the Paris climate accord and the Iran nuclear deal, have led even some of America’s closest partners to conclude that he wants to wreck the American-led

world order forged after the second world war. Mr Trump himself has called the EU a “foe” on trade. Donald Tusk, president of the European Council, has spoken bluntly of trans-Atlantic relations: “With friends like that, who needs enemies?”

An overreaction, perhaps. Defenders of Mr Trump’s strategy say he is seeking not to bury the rules-based order but to reinvigorate it, by questioning the role of institutions that have become inefficient or ineffective. As supporting evidence, they can point to the ceasefire declared on July 25th in the trade war with Europe. Others suggest that things might revert to normal when someone new is in the White House.

Yet it would be risky to rely on the hope that Trumpism will pass. American ambivalence about multilateralism is not new. George W. Bush, for example, in his first year as president pulled back from half a dozen international agreements, including the Anti-Ballistic Missile Treaty and the Kyoto protocol on climate change.

Around the world, the view that the change is both deep and lasting is gaining ground. A mere 9% of Germans think America under Mr Trump is a reliable partner for the security of Europe, according to a recent poll by ZDF Politbarometer. In Australia annual polling by the Lowy Institute, a think-tank, shows a 28-point fall

since 2011 in the share of people who trust America to act responsibly; at 55%, trust in America is at a historic low, only just ahead of trust in China (52%). “The order we have known for the past 70 years has ended,” according to Allan Gyngell, a former head of Australia’s Office of National Assessments, Australia’s main intelligence agency. “It’s not changing. It’s over.”

The D10 framework “takes on even greater meaning at this time of uncertainty surrounding America’s global role,” believes Mr Jain, who runs the D10 initiative at the Atlantic Council, an American think-tank, in partnership with a Canadian counterpart, the Centre for International Governance Innovation. The liberal order it stands for has always been an amorphous concept. Now that it is at risk, huddling together both to define and defend it becomes more urgent. The D10 group is part of a broader trend of intensifying efforts to rally the “like-minded” to that end. Mr Trump’s America First approach is prompting policymakers from Canberra to Ottawa to cast around for coalitions to limit the damage of his onslaughts and, eventually perhaps, fill gaps left by an American retreat from its global role.

Crudely, these efforts to rally the like-minded come in four varieties. The first in- ►

“open future”

The Economist has also entered the fray in defence of the liberal world order. This year we launched “Open Future”, to remake the case for the classical liberal values on which this newspaper was founded 175 years ago. The articles, debates and discussions can be found at Economist.com/openfuture

volves appealing to Americans beyond the Trump administration. Diplomats in Washington, DC, say defenders of the liberal order need to build support in Congress and to get on planes to other parts of the country and explain why the system Mr Trump is undermining has served America well. "Europeans need to engage, engage, engage: with Congress, with governors, with America's business community and civil society," wrote Wolfgang Ischinger, a former German ambassador who chairs the annual Munich Security Conference, in the *New York Times* on July 22nd.

Canada has been the most energetic in pursuing this strategy. Its ministers, mayors and diplomats have mounted a concerted effort at state and local level to draw attention to the American jobs and industries that depend on trade with Canada. This did not stop Mr Trump from slapping hefty metals tariffs on Canada and calling Justin Trudeau, its prime minister, "dishonest and weak" after the recent G7 summit he hosted. Canada's "smooth" diplomacy, and the resulting stream of representations on its behalf to the White House, may even have ended up irking Mr Trump. Canadians must hope that in the long term the bottom-up approach will pay off.

But relying on popular support in America for its global role might be too optimistic. So a second approach to convening the like-minded—with a broader, international focus—is also being tried. Like a Davos for the once-powerful, this mission is attracting gaggles of global grandes, as ex-presidents, former prime ministers and retired diplomats lend their weight to the effort to save the world they used to run.

The D10 process has spawned a new, wider enterprise, called the Democratic Order Initiative, that seeks to engage the public behind support for the international rules-based system. Launched on June 23rd in Berlin by the Atlantic Council, with backing from Madeleine Albright (a former secretary of state), Stephen Hadley (a former American national-security adviser), Carl Bildt (a former prime minister and foreign minister of Sweden) and Yoriko Kawaguchi (a former Japanese foreign minister), it aims to articulate core principles of the rules-based order and mobilise public and official backing for them.

In the same vein, the Alliance of Democracies Foundation was set up last year to "strengthen the spines" of the world's democracies. A brainchild of Anders Fogh Rasmussen, a former Danish prime minister and NATO secretary-general, it held an inaugural "Democracy Summit" in June and envisages annual winter gatherings in Colorado, as well as summer ones in Copenhagen. In the absence of clear ideological leadership from the White House, says Mr Rasmussen, the rest of the free world needs to advance and defend democracy.

The first initiative of the foundation's

global "campaign for democracy" is a Transatlantic Commission on Election Integrity, to bolster defences against outside interference. It is co-chaired by Mr Rasmussen and Michael Chertoff, a former secretary of homeland security in America; Joe Biden, America's former vice-president, is among the other 13 commissioners. They have urgent work to do. Mr Rasmussen points out that 20 elections will be held across EU and NATO countries between now and the next American presidential contest in November 2020.

Characteristically, it is France's "Jupiterian" president, Emmanuel Macron, who has the most ambitious project. His Paris Peace Forum, to be held on November 11th-13th, is envisaged as an annual event bringing together governments and civic groups to discuss the world's problems.



The idea is to show that "there is still a constituency for collective action, among states and civil society...beyond populism and interstate tensions."

Mr Macron wants ideas from all sorts of organisations, including governments, business associations, NGOs, trade unions, religious groups and think-tanks. The model is COP21, the summit in 2015 that produced the Paris accord on climate change. Mr Trump has decided to pull America out of that agreement, which is itself an example of the third variety of effort behind like-mindedness: keeping international deals alive in America's absence.

No country has followed America in abandoning the Paris accord. All the other 194 signatories are sticking with it, and hope America will one day rejoin the fold. Within America, state governments, cities and businesses have in many cases committed themselves to carbon reductions in the spirit of Paris.

European attempts to keep the Iran nuclear deal alive without America are proving trickier. The Trump administration

wants to maximise economic pressure on the Iranian regime, and is threatening sanctions on international companies doing business with the country. Without the incentive of closer business ties to support its struggling economy, Iran could decide to abandon the nuclear self-restraint at the heart of the deal.

However, the 12-country Trans-Pacific Partnership, a trade deal intended to set free-market rules for the region's trade before China's influence becomes overwhelming, has defied expectations. It has reinvented itself as an 11-country grouping after America, by far the biggest partner, decided to pull out when Mr Trump became president. Renamed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (TPP), it was signed in March in Chile and is expected to come into force around the end of this year, once at least six countries have ratified it. Similarly, some hope that, should Mr Trump's distaste for the multilateral trading system lead to America's quitting the World Trade Organisation, the global body could carry on without it.

Groping for groupings

Japan and Australia led efforts to keep the TPP alive. Both countries are also active in the fourth way of clubbing together: new coalitions between like-minded countries in the pursuit of shared interests, from trade to defence. On July 17th Japan signed a free-trade deal with the European Union, eliminating most tariffs and creating the world's largest open economic area, covering over 600m people and nearly a third of global GDP. Negotiations quickened in response to America's trade threats. Shinzo Abe, Japan's prime minister, said at the signing ceremony in Tokyo that the deal "shows the world the unshaken political will of Japan and the EU to lead the world as the champions of free trade at a time when protectionism has spread."

Australia has historically relied on a culturally similar foreign ally to guarantee regional security: first Britain, then America. China's rise and America's inward turn are concentrating minds. In "Without America: Australia in the new Asia", an essay published last November, Hugh White of Australian National University (ANU) predicts a not-too-distant future in which China is Asia's dominant power. But how to respond? "Our best hope", suggests Michael Wesley, also of ANU, writing in *Australian Foreign Affairs*, "is not for some grand coalition to balance China but for each of China's larger neighbours to assert its interests when they are challenged."

In the absence of a grand coalition, smaller ones may play a role in resisting an over-mighty China. In January when Australia's prime minister, Malcolm Turnbull, visited Japan, the two countries pledged to deepen and broaden defence co-opera-

tion. A “reciprocal access agreement” is being concluded to allow joint military exercises. In July Australia, Japan and India held high-level trilateral talks in New Delhi, raising the possibility of joint naval exercises. Another trio involving Australia, includes France as well as India. In a speech at a naval base in Sydney in May, Mr Macron called for a “Paris-Delhi-Canberra axis” to become an established regional structure, with France, India and Australia defining a joint strategy for the Indo-Pacific. “If we want to be seen and respected by China as an equal partner,” he said, “we must organise ourselves.” He envisages regular trilateral talks between foreign and defence ministers.

Back in Europe, the French president is also trying to bring the like-minded together on defence. His European Intervention Initiative (EII for short) was signed into existence by nine countries, including Britain and Germany, in June. The idea is to improve strategic co-operation so that coalitions of willing European countries can be ready for joint action in crises, if need be without America.

Such coalitions raise many questions. One concerns their effectiveness. Innovations such as the EII may be good ideas, but the gap between strategic dialogue and coalitions in a military operational sense is a wide one. For that, points out François Heisbourg of the Geneva Centre for Security Policy, you need both interoperability and agility. “You can’t just improvise, you have to have it built up.”

Does size matter?

Another reservation relates to the groups’ scale. Do they really amount to much? Even if they club together, for example, it is hard for other countries to match China’s clout in Asia. And there is no real substitute for America’s overall influence and power. The country spends more on defence than the next seven countries combined, produces 23% of global GDP (measured at market exchange rates) and has the world’s dominant currency. Still, Mr Rasmussen believes that a joint effort can make a difference while Mr Trump is president. “A group of midsized and wealthy democracies could join forces and protect the rules-based world order.”

How “like-minded” do countries need to be to work together? Canada and 16 Latin American countries have formed the “Lima Group” backing a restoration of democracy in Venezuela. They have blocked regional recognition of Venezuela’s vote for a Constituent Assembly last year and of a sham presidential election in May. Now, however, some wonder whether Mexico will retain its like-mindedness when Andrés Manuel López Obrador takes over as president in December, and whether Brazil will after its election in October.

Even in Europe, despite decades of

working towards “ever-closer union”, discerning who is really like-minded is becoming harder, as populist forces have gained influence. In Italy, for example, the Five Star Movement that is now the largest party in the country’s coalition government has threatened to block the EU’s free-trade agreement with Canada. “Before thinking of defending the liberal order globally there’s a problem of defending it within the EU,” says Marta Dassù, of the Aspen Institute Italia.

In some cases, hard-headedness may be just as important as like-mindedness. A lot depends on what the common approach is trying to achieve. In the words of Donald Rumsfeld, when he was America’s defence secretary at the time of the invasion of Afghanistan in 2001, “the mission determines the coalition.”

Sometimes it may be enough to be only partially like-minded, in pursuit of a common interest. China, for example, is seeking to make common cause with the European Union in defence of the global trading order that has served both well. At a summit meeting with the European Union in Beijing in July President Xi Jinping said they should “join hands to defend multilateralism and a rules-based free-trade system”. The two sides issued a joint communiqué supporting the system, something that had eluded them in their two previous summits. It suits the Europeans to flirt with China, to show America that they should not be taken for granted.

Still, without common values, co-operation is likely to remain limited. The Europeans are far more worried about Mr Xi’s authoritarian ways than about Mr Trump’s tendencies—and they share Mr Trump’s objections to China’s own mercantilist policies. For Europe, “the temptation to enrol China into the like-minded is very dangerous,” warns Ms Dassù.

China shows that not all initiatives of the like-minded involve champions of the liberal order. It has become an institutional entrepreneur in an effort to shape the

world to suit its interests. China has founded bodies such as the Asian Infrastructure Investment Bank, the “16+1” gathering of 16 central and eastern European countries plus China, and the world’s largest regional grouping (in terms of its members’ combined population), the Shanghai Co-operation Organisation (bringing together China, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan and Uzbekistan). And Mr Xi’s flagship project is the Belt and Road Initiative, a sweeping plan to build infrastructure along China’s trade routes.

As America retreats, expect China to cultivate such networks even more energetically. “The world is moving towards multipolarity,” Mr Xi told the recent summit of the BRICS (Brazil, Russia, India, China and South Africa) in Johannesburg. He appealed to a shared interest among this group in the evolution of the global governance system, championing the development of emerging markets. “We BRICS countries should...play a constructive role in building a new type of international relations,” he said.

The next few years are likely to see a boom in what might be called the like-mindedness industry. In the short term this is unlikely to impinge much on Mr Trump’s solipsistic world-view, let alone to alter his America First course. Other countries’ plurilateral initiatives will mostly be beneath his notice. But he might fight back against those that succeed in directly thwarting his intentions. The most obvious danger of a clash is over Iran, should the other parties to the nuclear deal manage to keep it afloat despite his attempt to scuttle it.

Like startups in the business world, many new coalitions of the like-minded will fail. But some could flourish. Mr Gynell predicts that the current “hub and spoke” order will give way to a power grid in which “networks and links will be ever more important.” This effervescent, entrepreneurial period in global affairs could help to save the existing world order—or start to shape a new one. ■





China's venture titans

Feeding frenzy

HANGZHOU

Alibaba and Tencent have become China's most formidable investors. Their gorging is shaping the next shoal of startups

SENSETIME, the world's most valuable artificial-intelligence startup, was not one to "bow and scrape for five pecks of rice", said Tang Xiaou, one of its co-founders, last September. Yet within two months the proud firm, which is worth \$4.5bn, had buckled and taken investment from Alibaba, a Chinese e-commerce titan. For ambitious entrepreneurs, it was all of a piece with a bleak scene that Mr Tang had described: "Google and Facebook ahead of you; behind you, a gaggle of small companies thinking of copying you. And above you, three big mountains."

Those three Chinese mountains are Baidu, an online-search giant, Alibaba and Tencent, a social-media and gaming titan, collectively known as BAT. Ever fewer promising young Chinese companies seem able to escape the reach of their insatiable investment teams. The tech triumvirate has already invested, directly or indirectly, in half of the 124 startups counted as "unicorns" (those worth \$1bn or more) by IT Juzi, a database of startups in Beijing. By the time firms hit the \$5bn mark, over 80% have taken a form of BAT investment. Their reach is a growing concern among entrepreneurs, though few openly admit it.

Of the triumvirate, two are colossi. Even after declines in their share prices, Alibaba and Tencent are still worth close to half a trillion dollars. In recent years both have moved out of their core businesses into areas as varied as bike-sharing, ride-

hailing and food delivery, clashing frequently along the way. Mature and powerful, they are ruthlessly blocking and tackling not only each other, but any firm that sides with the enemy.

More startups are thus becoming locked into a proxy war over the consumer internet, in turn shaping how young businesses strategise and grow. The risk is that China develops a sort of mandated form of entrepreneurship, driven by the strategies of a near-duopoly. That would be a disappointing turn of events for a calibre of innovators unseen in the country for years.

To venture-capital (vc) firms in America, the story may well sound familiar. There the talk is of a "kill-zone" around acquisitive technology giants including Am-

Also in this section

50 Bartleby: Mission implausible

51 Tech giants' earnings

52 Milk wars

52 Selling to Japan's elderly

53 Commercialising autonomous cars

54 The blockchain and energy

Schumpeter is away

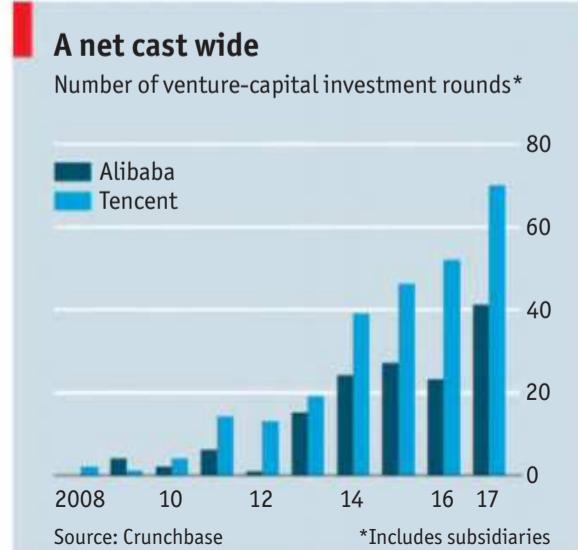
For daily coverage of business, visit
Economist.com/business-finance

azon, Facebook and Google, also mainly in consumer-internet products. But for sheer breadth and firepower, look to China. According to McKinsey, a consultant, America's giants make just 5% of all domestic vc investments, whereas between them the BATS account for close to half of those in China (though Baidu's are relatively meagre). Tencent has a portfolio of 600 stakeholdings acquired over the past six years (see chart), many unannounced. There is barely a trace of bombast when Jack Ma, Alibaba's founder, says that he eventually hopes to see former Alibaba employees running 200 of the top 500 Chinese firms.

Wen Feixiang, IT Juzi's founder, says that it is becoming received wisdom that to grow into a unicorn, a young firm has no choice but to join one of the two camps. Alibaba and Tencent are offering more than just large cheques. Their platforms have become irresistible. WeChat, Tencent's instant-messaging service, counts over 1bn users. Alibaba's emporia are home to 1m merchants. Between them they account for 94% of mobile transactions through WeChat Pay and Alipay, their rival payment systems.

In America, venture capitalists shy away from backing startups whose business centres on the consumer internet, because the likes of Google and Facebook are so dominant there. In China that is not yet the case, and early-round financing remains plentiful. Many vcs try to sniff out the sparkiest startups, anticipating a generous exit later when the giants buy in. Then dozens of young firms race each other to secure funding from Alibaba or Tencent.

That race helps propel entrepreneurship, argues Gan Jie, a professor and board member of DJI, a whizzy drone firm that, despite its valuation of \$15bn, has not taken investment from either Alibaba or Tencent (it, along with other Chinese hardware



► companies, has found it easier to resist). But it also means the giants get to determine who wins and who loses, she adds. When Tencent invested \$600m last summer in Mobike, a shared-bike startup, for example, Alibaba countered with a \$700m stake in a rival, Ofo. In a flash, dozens of smaller competitors were out of the race.

The duopoly's rivalry also thwarts ambition at younger firms. The story of Ele.me, a food-delivery platform founded a decade ago, whose name roughly means "Hungry yet?", is illustrative. It was expected to grow into an independent firm with a valuation as high as \$20bn or more. But in

2015 a merger occurred which made Alibaba feel insecure in food delivery. Meituan, backed by Alibaba, joined with its arch-rival, Dazhong Dianping, backed by Tencent. Soon afterwards Meituan-Dianping raised \$3.3bn in a funding round led by Tencent, giving the latter more sway.

Alibaba's riposte was to dump almost the entirety of its shares in Meituan. Seeking a new way to rival it, Alibaba invested in Ele.me and in April bought the platform outright, in a deal that valued Ele.me at \$9.5bn. It is now merely part of Alibaba's arsenal, one among 60 investments the giant has made since 2017, according to a

tally by Sanford C. Bernstein, a research firm. An Alibaba vice-president has been installed as its new chief executive.

As ambition shrinks within startups, innovation suffers. Few are trying to build a platform of users, because they expect to rely for traffic on WeChat. Startups which win Tencent's or Alibaba's favour expect to profit from reams of data, logistics networks, payment gateways and technological support, too. Gordon Orr, a former head of China for McKinsey, says that entrepreneurs tend to prefer a data-sharing agreement cemented with an equity shareholding than one without. For Alibaba and ►

Bartleby | Mission implausible

When visions and values descend into verbiage

OUR mission is what drives us to do everything possible to expand human potential." As a credo, it sounds suitably inspiring. But which member of the Dow Jones Industrial Average has this as a mission statement? And which company says that "our purpose unifies us in a common cause and growth strategy of improving more consumers' lives in small but meaningful ways each day?"

Top marks if you knew that the first statement came from Nike, which makes sportswear, and the second from Procter & Gamble (P&G), a consumer-goods group. But the slogans could have been switched between the two companies without stretching credulity.

Mission statements are not compulsory but they appeal to executives seeking to emphasise that their business is about more than making money. That in turn, they hope, should draw recruits who want to join a company with a broader purpose, which is an aim of many millennial employees.

Some of these statements are better than others. While P&G's is wordy, there is something pleasingly punchy about Caterpillar's credo—"our solutions help our customers build a better world"—and it is linked to the firm's core business of construction machinery.

But many groups talk in such grandiose, world-saving terms that they may remind listeners of Ralph Waldo Emerson's joke: "The louder he talked of his honour, the faster we counted our spoons." Cisco wants to "change the world", Walgreens Boots Alliance says it is "caring for people and communities around the world" and Chevron talks of "enabling human progress by developing the energy that improves lives and powers the world forward". And you just wanted enough petrol to get you to the shops.

Of course it is difficult to boil down your activities to a single sentence. Like the Spanish Inquisition's "diverse elements" in the sketch by Monty Python, the temptation is to keep adding points until confusion results. Cisco has a mission statement, a vision statement and a list of values, including "win together" and "always do the right thing".

While God made do with just ten commandments, Goldman Sachs has 14 business principles. Some of these do not seem to be "principles" at all, but unexciting descriptions of the nature of investment banking, such as, "our business is highly competitive and we aggressively seek to expand our client relationships."

In the face of such long-windedness, JPMorgan Chase might at first glance deserve credit for having a list of just four core principles. Alas, the quartet is pretty anodyne—"a great team and winning culture" is one example. And each principle comes with its own sub-principles, making 20 in all, including such convoluted efforts as "we are field and client driven; we operate at the local level" and "we maintain an open, entrepreneurial meritocracy for all".

The danger is that, by aiming to inspire, firms produce pious platitudes instead. For example, Exxon Mobil says "we must continuously achieve superior financial and operating results while simultaneously adhering to high ethical standards." Sounds good. But how will Exxon bring it about? Recent financial results have not been good; it is hard to judge ethical standards from the outside.

The danger with grand expressions of virtue is that they induce cynicism. It is all very well for firms to say they "value their people". But that is best demonstrated not by verbiage, but by concrete measures such as reducing the gender pay gap or paying staff above the minimum wage.

Indeed, mission statements are most worth analysing for the things they fail to mention. None of the firms cited as a core principle that they should provide their workers with a decent pension. Few if any state that they try to avoid compulsory redundancies. Among the Dow components, Johnson & Johnson, a consumer-products group, is unusual for stating that it must "bear our fair share of taxes". Paying tax is a pretty good way of demonstrating corporate citizenship.

The best statements are short and describe the business in a way that customers and employees can understand and appreciate. McDonald's is admirably succinct: "to be our customers' favourite place and way to eat and drink". Visa, with economical elegance, says its vision is "to be the best way to pay and be paid for everyone, everywhere." And Walmart talks of "saving people money so they can live better". It is not the stuff of inspiring oratory. But such clear, direct statements at least create the impression that the company knows what it is doing.



► Tencent, these often come with a board seat and voting rights.

The Chinese government, for its part, is surely delighted that its national technology champions are snapping up stakes in hundreds of startups. Being able to manage a handful of established private players with long-standing links to the Communist Party, with their tentacles in many young firms, makes the whole tech industry easier to control, be it through censorship directives or in directing its know-how to the state's industrial plans.

For that reason, the government is unlikely to want to break up the "walled gardens" that the giants have built round their offerings, in which startups must also operate. WeChat does not let users send friends direct links to Taobao, Alibaba's main shopping site. Apps owned by the two firms tend to make it either finicky or impossible to pay using their rival's payment system. Startups with backing from Alibaba or from Tencent have therefore come to expect to be frozen out of parts of the market. Liu Zihong, founder of Royole, an independent startup valued at \$5bn that makes flexible displays, says that, as a rule, "if you band with one giant you lose the chance to work with the other".

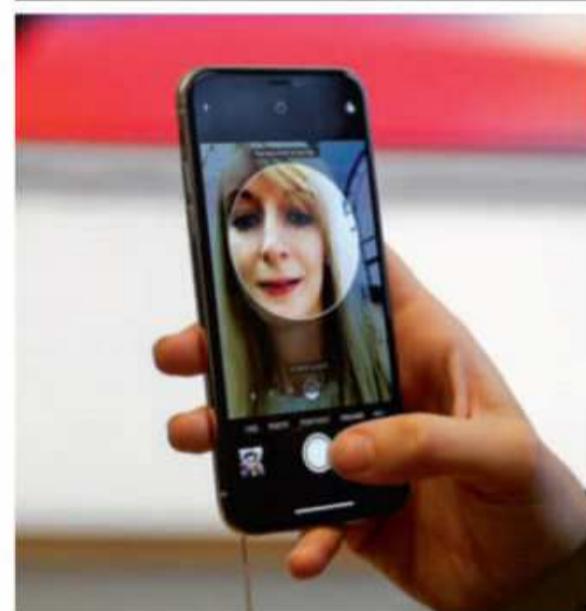
As independents, plenty of startups are giving Alibaba and Tencent a run for their money, often serving markets into which the giants have been slower to move. Pinduoduo, a discount-buying app, built its group-buying platform by targeting China's poorer cities. Tencent soon took a stake. Douyin and Huoshan, short-video apps backed by Bytedance, a technology firm with no current ties to the two giants, have hooked youngsters and left Tencent scrambling to create a rival offering.

Fast-growing platforms such as Youmiao, a luxury-handbag rental firm based in Hangzhou (also home to Alibaba), reckon they can take their pick of the giants' investment offers (Alibaba and Tencent came calling within months of Youmiao's launch). Some firms reject investment from the duopoly. Lea Liu of QingCloud, an ambitious cloud-computing platform in Beijing, says that "if you want to be IBM for the cloud, you cannot be a pawn in a giant's data-technology strategy".

Many entrepreneurs also welcome the recent rise of a new tech trinity: TMD, for Toutiao (a news-aggregation app owned by Bytedance), Meituan and Didi Chuxing (a ride-hailing service). The trio are among China's fastest-growing platforms, all founded since 2010. Meituan and Didi both rose with backing from a giant, but Bytedance publicly fell out with Alibaba-backed Weibo, a Twitter-like platform that eventually retracted its investment from the bolshie tech startup. It has since pursued its own course. "Nobody thought that a company like Toutiao would emerge to rival the likes of Tencent and Baidu," says

Richard Peng, a former investment chief for Tencent who now runs Genesis Capital, a China-based venture-capital firm.

Last year Meituan set up its own investment fund, opening a new channel for startups (that is at some distance from Tencent). It will doubtless be closely monitored by the duopoly. The two firms have rarely been so watchful of the other, in a competition that Tencent's Pony Ma says has been "formalised in our country". Even he has confessed on occasion that it is an unhealthy one. But the two giants should be on their guard for another reason: having for so long fostered innovation, they are now at risk of sapping it. They would be among the first to suffer. ■



The technology industry

FATWIN v MAGA

The era of the FAANGs may be over

IN THE end, it wasn't enough, at least for now. On July 31st Apple announced results for its third quarter that handily beat analysts' expectations. Revenues rose by 17% compared with the same period in 2017, and profits were 32% higher. The firm's shares jumped by nearly 4% in after-hours trading. But Apple did not quite manage to become the world's first widely held listed company with a market capitalisation of \$1trn (see chart).

The near miss is a fitting coda to the latest round of results in techland. Momentum in this most upwardly mobile of industries is unbroken; sales and profits are still rising. But the laws of economic gravity have not been repealed. In fact, the era of the FAANGs—as Facebook, Amazon, Apple, Netflix and Google's parent, Alphabet, are collectively known—may be coming to an end, giving way to a period in which two groups of tech firms follow different

trajectories.

This year the FAANGs and a few other high-flying tech firms provided more than half the returns in the S&P 500 share index. Netflix's share price, for instance, more than doubled between January and July. Twitter's almost did so. Facebook's market value quickly recovered from a low in March, after revelations that its data on 87m users had leaked to a British political-campaign firm.

With their shares priced for near-perfect results, the firms were vulnerable to bad news. This duly arrived, starting with Netflix, a video-streaming service, which said in mid-July that it had added fewer subscribers than expected. A few days later Facebook gave downbeat guidance about future growth and margins. Then Twitter, a microblogging site, announced that its number of active users had declined. All three firms' share prices plunged by about a fifth.

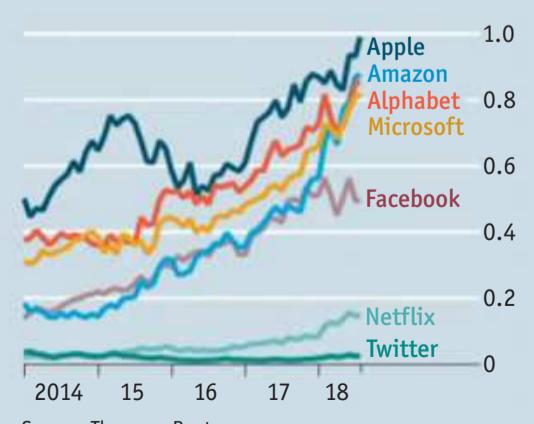
News of the wipeout overshadowed the fact that the other tech titans continue to do well, as also evidenced in July. Microsoft, the world's biggest software firm, reached \$100bn in annual revenue for the first time. Alphabet shrugged off the \$5bn fine recently imposed on it by European trustbusters and posted strong results. Amazon announced a record quarterly profit.

These diverging results point to a broader development. Throwing all the FAANGs and other big tech firms into one basket has always been lazy. In the future they will probably be seen as two different groups: a consumer-oriented one, which could, somewhat awkwardly, be called "FATWIN" (Facebook, Twitter and Netflix) and a more business-to-business group, which some already dub "MAGA" (Microsoft, Amazon, Google and Apple).

The first group shows signs of reaching maturity. It is not that the firms will now stagnate. Facebook's revenues grew by 42%; Twitter's were up by 24%. But signs abound that social media's best days are over. Advertising revenues are not infinite. Users are exhibiting social-media fatigue. And regulators will continue to prod firms to police their platforms (one of the rea-

Trillion-dollar wannabes

Market capitalisation, \$trn



sons for Facebook's shrinking margins is that it has been hiring thousands of moderators to vet users' posts). The firm's earnings call should be seen as a "big reset of investor expectations", says Mark Mahaney of RBC Capital Markets, a bank.

The second group benefits from the fact that companies continue to embrace cloud computing, particularly as it starts to encompass artificial-intelligence services. Amazon's record profits were generated by

its cloud-computing arm, as were Microsoft's expanding revenues. Google, too, is making more money from the cloud, although it still depends on advertising as its main engine. As for Apple, being mainly a hardware-maker, it stands apart. Although it did not ship as many iPhones as expected, it sold them at a higher average price. Its services business, which includes the iTunes music store and the iCloud bundle of offerings, had its best quarter ever, post-

ing revenues of nearly \$10bn.

Overall, tech firms will continue to thrive, says Brian Wieser of Pivotal Research. Yet all bets will be off should America's trade war with China continue to get hotter. Apple is most vulnerable. Not only are most of its devices made in China, but the country is its second-largest market. If Apple gets hit by tariffs, another company is likely to get to \$1trn first. But right now, that prize seems within its reach. ■

Food labelling

Got oats?

Plant-based milk alternatives disrupt the dairy business

THE humble oat doesn't exactly ooze Instagrammable cool. Yet it is fast becoming the star in trendy coffee shops, favoured by baristas as their faux milk of choice thanks to its "mouthfeel", taste and ability to foam and be swirled into "latté art". Demand for alternatives to dairy has accelerated over the past six months, says Robert Robinson, the co-founder of Notes, one coffee chain in London where oat milk has become the firm favourite over soya and almond. "It works so well with the acidity of espresso and just tastes better," he adds.

Plant-based milks are booming as consumers seek to eliminate dairy from their cereal bowls and coffee cups, mostly for health, welfare or environmental reasons. A survey by Mintel, a research firm, found that half of a sample of Americans bought non-dairy milk over the past three months. Last year Britain's Office for National Statistics added non-dairy milk as a subsection of mainstream goods in its consumer-price index—a sure sign that the trend is here to stay. Innova Market Insights expects the global market to surpass \$16bn in 2018.

As consumers separate the wheat from the chaff, soya, the original alt milk, has been losing market share. Experiments with peas, pecans and flax all had their problems. Almond milk, an established favourite in America, suffered when its environmental credentials were questioned; one almond requires five litres of water to produce.

Oat milk's environmental footprint is modest by comparison and its health properties are solid. Albeit from a low base, sales in Britain grew last year by 76%, according to Nielsen, compared with 24% for coconut (also a newcomer), 14% for almond and 5% for soya milk. Europe's leading producer, Oatly, has made the drink for decades, though mostly just for people with dietary restrictions. After it revamped its branding a few years ago and decided to appeal to

consumers via baristas rather than retailers, "the snowball just started rolling and hasn't stopped," says Ishen Paran, a spokesperson. Customers started demanding supermarkets stock it, first in Europe and now in America. It all led to an oat-milk drought in late 2017, with prices on Amazon soaring as well-off parents scrambled for the goods. A sure sign of a fad, critics scoffed.

The dairy sector would certainly like to think so. It is lobbying for protection in Europe and America and promoting educational campaigns such as #Milk-Truth. Last year the European Court of Justice ruled in its favour and forbade the use of terms such as "milk" and "butter" for plant-based products, which now call themselves "drinks". Producers in America want the same. In July Scott Gottlieb, head of the Food and Drug Administration, said the agency would clarify what could be marketed as milk, adding that "an almond doesn't lactate, I'll confess." Not all dairy firms are resisting. Some, to their credit, have brought out lactose-free or dairy-free products. Following the consumer, after all, is usually the best route to a cash cow.



Cream of the crop

Business and demography

Silver linings

TOKYO

Japanese firms get better at selling to the country's legions of elderly

A BRANCH of Renaissance, a Japanese chain of fitness centres, would not seem the likeliest place to find crowds of the elderly, but they abound. Older women chat as they leave the facilities with wet hair; a couple of seniors sit in the lounge reading books and sipping coffee. The lounge is something the chain introduced with the grey-haired in mind. "Our older clients like community and hospitality," says Naoki Takazaka of Renaissance. All staff must make time to chat with them.

Japan's population is ageing more rapidly than any other country's. Those over 65 years of age make up 28% of the population, a proportion expected to rise to 40% by 2065. Any business that wants to prosper has to cater to their needs. It is an opportunity rather than a problem, says Masahiko Uotani, chief executive of Shiseido Group, a cosmetics behemoth: older people live longer, are active for longer than past generations and are relatively rich. "But you have to take the time to find out what they actually want since it is often not what you expect," he says.

The obvious opportunities are in care of the elderly and end-of-life services such as funerals. Big companies such as Kobe Steel and Hitachi, two industrial heavyweights, sell private housing to seniors. Several providers of nursery schools have also started care homes for the more numerous people at the other end of life. Robotics firms are developing tools to help old people live independently for longer. Manufacturers of walking sticks and adult nappies are faring well.

Unexpected avenues of business are also opening up. Renaissance realised earlier than other companies that older people want to stay fit and started to offer discounted memberships for those over 60. By 2016, 30% of its customers were over 60 compared to just over 3% in 1994. People in this age group are much less likely than

► younger members to give up their membership, which is good for business, says Mr Takazaka.

Many retirees simply want the same things as those a decade younger, slightly tweaked. O-net, Rakuten's matchmaking arm, in 2013 launched a dating service for seniors which is growing. Shiseido beauticians go into care homes to teach old people how to do their make-up, at a cost (to the care home) of ¥10,000-20,000 (\$88-177) per visit; a process with therapeutic benefits. Since older people often spend longer in a shop, making them more likely to spend, some convenience-store chains have tried to become places to socialise by adding dining facilities or having personnel make coffee rather than offering it from a machine, says Ming Li of Lawson, a chain of convenience stores.

Companies have also noticed how, in Japan too, elderly folk are reluctant to shop online. Lawson is rolling out stocks of books in some shops while it and other convenience-store chains (so ubiquitous that older people can often walk to them) are competing with supermarkets by stocking more food, cleaning products and over-the-counter medicines.

Despite the plethora of initiatives, businesses are only in the early days of working out how to target older consumers, says Hiroyuki Murata, who heads the Centre for Studies on Ageing Societies and advises firms on targeting the silver-haired. Few companies have yet started opening early, for example, when old people say they like to get out and about. Most stores have yet to improve access for the infirm with, say, handrails (public facilities have brought in features such as slow escalator speeds).

Marketing to older people is another area that needs work. They want to be subtly targeted, says Mr Uotani, rather than being reminded of their age through, say, adverts using someone advanced in years or with wrinkles. "I'm 64 and I am not old!" he says. His firm seems to have pulled this off; sales of Shiseido's Prior range of cosmetics aimed at those over 50, with simple packaging and instructions on how to use the products in a large font, have risen by 120% per year in the two years since its launch in 2015.

Another sizeable opportunity may lie in what firms can then export in terms of know-how as other countries follow Japan's demographic trajectory. Last year Shiseido started to run its care-home cosmetics lessons in Taiwan. Renaissance has developed Synapsology, a programme of simple but ever-changing exercises for the brain, and now makes money both taking the programme into care homes and certifying people to run the course. It has struck a deal for a South Korean company to host it locally. That fits nicely with another priority of which Japanese firms often talk: becoming more global-minded. ■



Commercialising autonomous vehicles

Gently does it

A six-month trial in Texas focuses on what self-driving technology can do now

NOBODY likes it when a taxi takes longer than expected to arrive. But that is what is happening with self-driving cars. Building a vehicle that can handle a busy street, with cyclists, pedestrians, road-works and emergency vehicles, is a tall order. In March a pedestrian was killed in Tempe, Arizona when a self-driving Uber vehicle failed to spot her as she wheeled her bicycle across an empty road at night, and the vehicle's safety driver failed to hit the brakes. There is a growing sense that the technology has, so far, overpromised and underdelivered. So a trial of self-driving vans that began in Frisco, Texas on July 30th is notable for its realistic approach to what the technology can do today.

Drive.ai, a startup, has deployed seven minivans to transport people within a limited area of the city that includes an office park and a retail area. "We are identifying a valuable use case that we can deploy with today's technology," says Andrew Ng, a board member and a pioneer of "deep learning", the technique that underpins the current boom in artificial intelligence. As the technology evolves, he says, so will autonomous-vehicle services. For now, though, Drive.ai is keeping things simple.

All pick-ups and drop-offs happen at designated stops, to minimise disruption as passengers get on and off. Riders hail the vans using an app and go to the nearest stop; a vehicle then appears to pick them up. (The vehicles do not circulate continuously like shuttle buses, but wait to be

called, and plan their routes dynamically.) Use of the service is free of charge for now.

The vans are painted a garish orange and clearly labelled as self-driving vehicles. "We weren't going for pretty, we were going for distinctive," says Mr Ng, who draws an analogy with yellow school buses: people understand that some kinds of vehicles behave in particular ways, and accommodate them accordingly. Screens mounted on the vans' exteriors let them communicate with pedestrians and other road users, for example to tell a pedestrian that it is safe to cross a road. Rather than trying to build a vehicle that mimics a human-piloted one, Drive.ai is making the self-driving nature of its vehicles explicit.

Similarly, rather than trying to build a vehicle that can navigate roadworks (a notoriously difficult problem, given inconsistent signage), Drive.ai has arranged for the city authorities to tell it where any roadworks are each day, so that its vehicles can avoid them. The company has also liaised with emergency services (another potential source of confusion for autonomous vehicles) and held a series of town-hall meetings to answer questions from locals.

Drive.ai will limit the service to daylight hours, which makes things simpler and safer. Each vehicle will initially have a safety driver, who will shift to a passenger seat if all goes well. If a van gets confused it can stop and call for help: a remote supervisor then advises it how to proceed (rather than driving the vehicle remotely, which

► would not be safe, says Mr Ng).

It might sound as though Drive.ai is cheating, by simplifying the problem in so many ways. But the end result is still a useful service; letting workers visit the retail park for lunch without having to worry about driving or parking. And it provides a foundation from which to expand the service in future, in Frisco and elsewhere.

Drive.ai plans to license its technology to others, and has struck a deal with Lyft, a ride-hailing firm, to operate vehicles in and around San Francisco. "I think the autonomous-vehicle industry should be upfront about recognising the limitations of today's technology," says Mr Ng. It is surely better to find pragmatic ways to work around those limitations than pretend they do not exist or promise that solving them will be easy. ■

The blockchain and energy

Greens meet geeks

Hope, hype and heresy as energy rides the cryptowave

TEPCO, Japan's largest energy firm, is an unlikely advocate of techno-anarchy. The firm is best known for the meltdown at its Fukushima Dai-ichi nuclear-power plant in 2011, during which its buttoned-down executives showed corporate Japan at its most stultified. Yet it is trying to reinvent itself as a pioneer of one of the edgiest forms of energy. It is embracing blockchain technology with an aim, no less, of overthrowing the old order in the electricity business to make it more decentralised.

Blockchains, the technologies on which bitcoin and other cryptocurrencies are built, may at first appear to be an uneasy fit with the energy business. Electricity has in the past been generated centrally, run across vast physical grids, with constant management by system operators to keep power flowing smoothly. Blockchains are distributed digital ledgers, which are not managed by a central authority, but collectively by a group of users. If anything, cryptocurrency blockchains are a drain on energy rather than a support for it. Digiconomist, a blog, estimates that just one bitcoin transaction uses as much electricity as an average household in the Netherlands uses in a month.

Yet in an era when more businesses, communities and households are generating their own energy, chiefly via solar and wind power, startups and big utilities alike believe blockchains will help speed the move towards decentralisation. They are finding ways to do this with minimal energy consumption.

There is lots of hype and a degree of heresy, given that stodgy utilities are making use of an anti-establishment technology. Almost all blockchain applications are still experimental. But the scope of potential blockchain-energy businesses is so wide that there may be successes to come. The applications range from ways to promote buying, selling or trading of clean energy between individuals (also called peer-to-peer trading), to balancing wholesale electricity markets (ensuring that supply always matches demand), to trading carbon credits. Further uses are enabling households to provide charging stations for electric cars, and funding the development of solar power in poor countries.

Numbers are hazy. The Energy Futures Initiative, a think-tank led by Ernest Moniz, a former American energy secretary, says that \$100m-300m has been invested in over 100 blockchain-related energy ventures. Specialists at the Council on Foreign Relations (CFR), an American think-tank, say most investment so far has gone into peer-to-peer trading and grid-balancing applications. A "try-anything" attitude prevails. "It is like looking at cell phones circa 1995 and not knowing what the future of mobile communications will be," says Sam Hartnett of the Energy Web Foundation (EWF), a non-profit venture aimed at developing core blockchain technology for the energy industry.

Tepco, for instance, appears to be throwing the digital equivalent of spaghetti at the wall to see what sticks. In December, it made an investment of an undisclosed sum in Electron, a British blockchain company that is focusing chiefly on handling the multiplying options for flexible demand in electricity systems. In April Electrify, a Singapore-based startup, said it had signed a memorandum of understanding with Tepco to experiment with peer-to-peer electricity trading. The Japanese group is also one of more than 70 firms, including utilities Duke Energy and Centrica, and oil firms Royal Dutch Shell and Equinor, that are part of the EWF.

Among many initiatives, the EWF is pioneering a blockchain application that tracks renewable-energy certificates used to offset carbon emissions to make them more transparent and granular.

Experts say it is important to bust two myths—one too positive, the other too negative—about the blockchain and energy. First, there is a view, promoted in many initial coin offerings, that everyone will be able to use the blockchain and cryptocurrencies to trade locally-generated energy (rooftop solar, for instance) with each other, without a centralised utility in the middle. This is largely nonsense. Electricity still needs to travel down poles and wires, for which the transmission and distribution companies will want hard cash. The blockchain will be used, if at all, at either end of the grid.

On the negative side, a view prevails that the blockchain will guzzle too much electricity for energy applications to make sense. But this assumes that projects will use a public blockchain such as bitcoin, which anyone can access with the right software, requiring lots of computing power and time to verify each transaction and protect the blockchain. Energy firms could in fact employ blockchains in which only trusted participants can join, making the process of maintaining the blockchain faster and less energy-hungry.

Mr Hartnett says that, while bitcoin transactions can consume the energy of a medium-sized country when done regularly, those of EWF are "of the order of a medium-sized office building". The use of trusted pools of participants is where the utilities spy an opportunity to co-opt a potentially insurgent technology; they will use it to remain central to the decentralisation of electricity. "The [blockchain] ventures most likely to achieve commercial traction in the coming years will largely work within the existing system and partner with incumbents such as utilities," says the CFR report. Or as Electrify's Martin Lim colourfully puts it, "It's ironic. Every subversive turns into a dictator." ■



Cryptohipster joins the grid



John Stuart Mill

Against the tyranny of the majority

Why the father of liberalism still matters today

BY THE age of six, John Stuart Mill had written a history of Rome. By seven, he was devouring Plato in Greek. "This looks like bragging," his father James told a friend when the boy was eight; "John is now an adept in the first six books of Euclid and in Algebra."

The hot-housing that began at the younger Mill's birth in 1806 yielded its intended result: a prodigy with a profound faith in the power of reason. He became the leading exponent of the philosophy of liberalism, formulating ideas about economics and democracy that shaped the political debates of the 19th century. His reflections on individual rights and mob rule still resonate today. Especially today.

Mill grew up at a time of revolution. Democracy was on the march. America had broken free from Britain; France had overthrown its monarchy. In 1832 Britain passed the first Reform Act, which extended the franchise to the middle classes. The Industrial Revolution was in full swing. The old social order, in which birth determined social position, was disintegrating. Nobody could be certain what would replace it.

Many today see Mill as an avatar for the ruthless capitalism of his era. Henry Ad-

In this series

- 1 John Stuart Mill
- 2 Alexis de Tocqueville
- 3 John Maynard Keynes
- 4 Schumpeter, Popper and Hayek
- 5 Berlin, Rawls and Nozick
- 6 Rousseau, Marx and Nietzsche

ams, an American historian, referred to Mill as "his Satanic free-trade majesty". In the few surviving photos of him, he looks somewhat cold and unfeeling.

He wasn't. True, in his early years Mill was a dyed-in-the-wool utilitarian. His mentor was Jeremy Bentham, who had argued that the principle underlying all social activity ought to be "the greatest happiness of the greatest number". The aim of political economy, as economics was then known, was to maximise utility. Like Gradgrind in Charles Dickens's "Hard Times", Mill initially followed Bentham in seeing humans as mere calculating machines.

But that was only the young Mill. In his

brilliant autobiography, published after his death in 1873, he confided that he grew up "in the absence of love and in the presence of fear". The result was a breakdown in his early 20s. He later came to believe that there must be more to life than what Benthamites term the "felicific calculus"—the accounting of pleasure and pain.

He turned to the poetry of William Wordsworth and Samuel Taylor Coleridge, which taught him about beauty, honour and loyalty. His new aesthetic sense pushed him away from gung-ho reformism and gently towards conservatism. If the societies of the past had produced such good art, he reasoned, they must have something to offer his age.

Mill did not reject utilitarianism as thoroughly as his contemporary Thomas Carlyle, who argued that only pigs would view the seeking of pleasure as the foundation of all ethics. Instead, Mill qualified it. Unlike Bentham, who thought that pushpin, a board game, was "of equal value with...poetry", he maintained that some sorts of pleasure were superior to others. He denied that these nuances meant he was no longer a utilitarian at all. What may at first seem a purely virtuous act that engenders no immediate pleasure—being true to your word, say—may eventually come to seem essential to well-being.

This refinement of utilitarianism demonstrated a pragmatism that is one of Mill's intellectual hallmarks. On many issues it is difficult to pigeonhole his stance, or even to pin down exactly what he believes. Part of what makes him a great thinker is that he qualifies his own arguments. His views evolved over the course of his life, but for most of it he rejected absolutes and recognised the world's mess and complexity. John Gray, a philosopher, writes that Mill was "an eclectic and transitional thinker whose writings cannot be expected to yield a coherent doctrine."

Above all, though, like all liberals Mill believed in the power of individual thought. His first big work, "A System of Logic", argues that humanity's greatest weakness is its tendency to delude itself as to the veracity of unexamined convictions. He renounced shibboleths, orthodoxies and received wisdom: anything that stopped people thinking for themselves.

He wanted them to be exposed to as wide a range of opinions as possible, and for no idea or practice to remain unchallenged. That was the path to both true happiness and progress. To protect freedom of expression he formulated his "harm principle": "the only purpose for which power can be rightfully exercised over any member of a civilised community, against his will, is to prevent harm to others," he wrote in "On Liberty", his most famous book.

As Richard Reeves's biography makes clear, Mill thought the coming industrial, ►

►democratic age could enable human flourishing in some ways, but hinder it in others. Take free trade, for which he was an enthusiast (despite working for a long time for the East India Company, perhaps the world's biggest-ever monopoly). He thought free trade increased productivity: "Whatever causes a greater quantity of anything to be produced in the same place, tends to the general increase of the productive powers of the world," he wrote in "Principles of Political Economy". He criticised the Corn Laws, tariffs which largely benefited holders of agricultural land.

Yet Mill was even more taken by the philosophical argument for free trade. "It is hardly possible to overrate the value, in the present low state of human improvement, of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar." This applied to everyone: "there is no nation which does not need to borrow from others." He practised what he preached, spending a lot of time in France and seeing himself as a sort of interlocutor between the revolutionary passion of French politics and the buttoned-down gradualism of England.

As democracy spread, he anticipated, ideas would clash. He supported the Reform Act of 1832, which, as well as extending the franchise, did away with "rotten boroughs", constituencies with tiny electorates, often controlled by a single person. He praised France's move in 1848 to institute universal male suffrage. Each voter's views would be represented—and each would have reason to be informed. Participation in collective decision-making was for Mill part of the good life.

For the same reason he was an early proponent of votes for women. "I consider [sex] to be as entirely irrelevant to political rights as difference in height or in the colour of the hair," he wrote in "Considerations on Representative Government". After becoming an MP in 1865, he presented a petition calling for female suffrage.

Mill believed that society was advancing. But he also foresaw threats. Capitalism had flaws; democracy had an alarming tendency to undermine itself.

Take capitalism first. In 1800-50 average annual real-wage growth in Britain was a pathetic 0.5%. The average working week was 60 hours long. At times life expectancy in some cities dipped below 30. Mill supported trade unions and legislation to improve working conditions.

He worried, though, that capitalism could inflict spiritual damage that would be harder to fix. The pressure to accumulate wealth could lead to passive acceptance of the world as it was—what Mill's disciples call the "tyranny of conformity".

Mill loved the idea of a country founded on liberty, but he feared America had fallen into precisely this trap. Americans

displayed "general indifference to those kinds of knowledge and mental culture which cannot be immediately converted into pounds, shillings and pence." Following Alexis de Tocqueville's premonitions, Mill saw America as the country where there was less genuine freedom of thought than any other. How else could it live with such a huge inconsistency at its heart: a proclamation of liberty for all which co-existed with the institution of slavery?

In praise of experts

Democracy itself threatened the free exchange of ideas in a different way. Mill thought it right that ordinary people were being emancipated. But once free to make their own choices, they were liable to be taken in by prejudice or narrow appeals to self-interest. Give the working classes a vote, and chaos could result.

That in turn might cramp society's intellectual development, the views of the ma-



jority stifling individual creativity and thought. Those who challenged received wisdom—the freethinkers, the cranks, the Mills—might be shunned by "public opinion". Expertise could be devalued as the "will of the people" reigned supreme.

The upshot was frightening. Paradoxically individual freedom could end up being more restricted under mass democracy than under the despotic sovereigns of yore. Mill famously refers to this as "tyranny of the majority". But he worries just as much about middle-class "respectable" opinion as working-class ignorance.

He pondered how to counter the tyrannical tendencies inherent in economic and political liberalism. Experts had a vital role to play, he thought. Progress required people with the time and inclination for serious study—a secular clergy, of sorts, termed the "clerisy" (a word borrowed from Coleridge). The clerisy had a utilitarian justification: its members would devise "rules that would maximise human well-being if we

all followed them," as Alan Ryan, a political theorist, puts it.

One solution was to give educated voters greater power. In this dispensation, people who could not read or write, or who had received the 19th-century equivalent of welfare benefits, would not get a vote. (Mill also thought certain citizens of Britain's colonies, including Indians, were incapable of self-government.) University graduates might get six votes, unskilled workers one. The aim was to give those who had thought deeply about the world more say. The lower orders would be reminded that they required political and moral guidance, though in time more of them would join the ranks of the educated.

Although that approach looks snobbish, or worse, Mill was enlightened for his time. Indeed, he would have approved many of the social changes in the 21st century, including the universal franchise and women's rights.

There would be much to concern him, too. Take Brexit. Whether or not Mill would have been a Brexiteer, he would have abhorred the referendum. Why get laymen to decide a matter on which they have little knowledge? He would have watched the rise of President Donald Trump, whose anti-intellectualism he would have loathed, and say: "I told you so." He might have been surprised that America had taken so long to elect a demagogue.

The intellectual climate on both sides of the Atlantic would have depressed him. "[T]he peculiar evil of silencing the expression of an opinion is, that it is robbing the human race," Mill wrote in "On Liberty". "If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error." He would not be impressed by no-platforming.

He might well argue that, before 2016, liberal thought had succumbed to a tyranny of conformity. Until recently there was little talk in liberal society about the "left behind" or the losers from free trade. Many liberals had fallen into a decidedly unMillian complacency—assuming that all the big arguments had been settled.

No longer. Mr Trump's victory has prompted liberals to revisit the case for everything from free trade to immigration. Brexit has led to a lively debate about the proper locus of power. And universities have become a battleground over the limits of free speech. Like Mill's, these are disorienting times—urgently requiring the intellectual flexibility and boldness epitomised by the father of liberalism. ■

open future

Read more on classical liberal values and thinkers at Economist.com/openfuture



Greece

Far from the finish line

ATHENS

Greece's economy is expanding again, but the crisis has caused lasting damage

NO ONE buys furniture in a crisis," laments Konstantinos Vourvoukakis. He and his father used to sell handmade furniture, but as customers became strapped for cash, they shut up shop in 2014. A chatty man with a sunny disposition, he started driving a taxi instead, ferrying tourists around Athens and offering travel tips. But he doubts he will be able to afford a holiday himself any time soon.

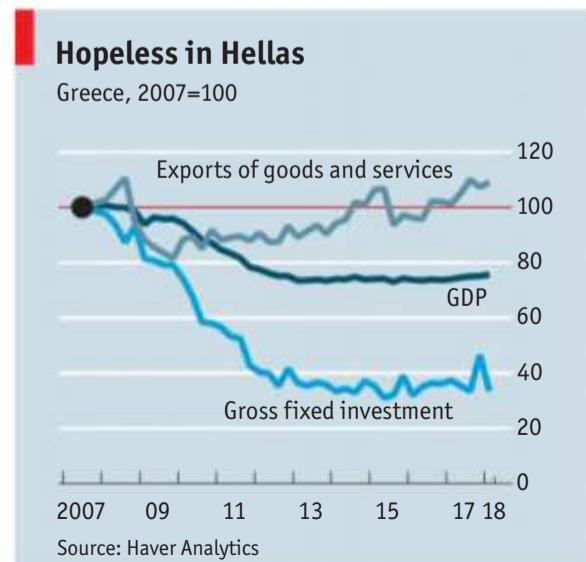
Greece's public-debt woes triggered an economic collapse that lasted longer than the Great Depression in America. In 2009 the new prime minister admitted that budget-deficit figures had been understated for years, and were perhaps double those originally reported. Ratings agencies downgraded its debt. Interest rates surged. In 2010 the government turned to the euro zone and the IMF for help. Their loans had strings attached: that Greece implement deep spending cuts and structural reforms.

On August 20th Greece exits the last of three bail-out packages. Both its creditors and its government think its public finances have improved enough for it to borrow from the markets again. Debt relief agreed on in June helps cushion its return. The maturity of some loans has been extended, and interest-rate relief offered on others. A cash buffer of €24bn, enough to cover nearly two years of Greece's funding needs, should also reassure investors.

But the public finances and economy

have miles to go before they reach normality. Public spending is still severely restrained. The Greek government has signed up to exceedingly ambitious targets: primary surpluses (that is, excluding interest payments) of 3.5% of GDP until 2022—which only a few non-oil-producing countries have achieved in the past 30 years—and an average of 2.2% until 2060. In the early years, creditors will monitor progress every quarter.

Euclid Tsakalotos, the finance minister, is confident that Greece will beat these targets, freeing up budgetary space for tax cuts and greater investment and social spending. But Greece's public-debt burden of 180% of GDP means that creditors' faith



Also in this section

58 Consumer lending

59 Asset management

59 Myanmar's state-owned enterprises

60 Buttonwood: Made in Japan

61 Free exchange: Homespun economics

For daily analysis and debate on economics, visit
Economist.com/economics

in the public finances is vulnerable to missed targets, slow growth or a sharp rise in interest rates. In a report released on July 31st the IMF said that further debt relief might be needed.

After years of contraction, followed by stagnation, the economy is growing again. But Mr Vourvoukakis and most of his compatriots are yet to feel the benefit. The crisis caused profound damage to the economy. In real terms, GDP and investment are significantly below pre-crisis peaks (see chart). A fifth of the workforce, and two-fifths of young people, are unemployed. For Greeks lucky enough to have jobs, wages have been slashed and taxes raised. Hundreds of thousands of mostly young and skilled people have left the country in search of better livelihoods.

The crisis exposed deep flaws in Greece's economic model. It relied too much on low interest rates, which funded splurges on public spending and housing, and too little on exports. Wages had far outstripped productivity, making the country less competitive than many others in the euro zone. The government bureaucracy and courts were corrupt and inefficient. Greece was a forbidding place for foreign investors and new businesses.

The situation is now improving, though slowly. Exports have risen, partly thanks to a doubling in the number of tourists visiting Greece (though Spain and Ireland, which also struggled after the financial crisis, have seen exports grow more). Competitiveness has improved because of falling nominal wages—a painful way to adjust, but the only one possible in a currency union with low inflation.

The government's belt-tightening has been drastic—and counterproductive, many economists argue. Tax rates are now higher than in most of the European Un- ►

ion, points out Miranda Xafa of the Centre for International Governance Innovation, and may be choking growth. The tax-free threshold is higher than the median private-sector wage, meaning revenues depend on a small share of taxpayers. The marginal rate for Greeks earning €40,000 (\$46,500) or above (including social-security contributions) is around 70%. Ms Xafa thinks that evasion may be rising, as self-employed people conceal their income. At its creditors' insistence, the government will broaden the tax base in 2020.

Growth is still disappointing. GDP rose by 1.4% in 2017, and is expected to increase by around 2% this year. The IMF is gloomy about the economy's potential, partly because of a rapidly ageing population.

The banking system is still ailing. Just under half of existing loans are non-performing, and banks have little appetite to offer new credit. They are now better set up to sell non-performing assets, but working out how much collateral is worth and which indebted businesses can survive will take time. Even if banks' targets are hit by the end of 2019, bad loans will still account for over a third of the books.

The biggest barrier to growth, though, is that it is still harder to do business in Greece than in other European countries. Take the €8bn privatisation of Hellenikon, the site of the old Athens airport. The lease for the land was put out to tender in 2011 and eventually bought by a consortium of Greek, Chinese and Emirati investors, who intend to turn it into a holiday resort. But delays, arguments over terms and investigations by environmental agencies mean that the buyer has yet to break ground.

Improvements to the business environment, justice system and public administration are all on Mr Tsakalotos's agenda. But critics doubt his government's commitment to reform. Greece rose rapidly up the World Bank's *Doing Business* rankings until 2015, when a coalition government led by Syriza, a radical left-wing party, came to power. It has rowed back on some of its predecessors' reforms, such as liberalising highly regulated professions and curbing collective wage-bargaining. The IMF frets that pay rises might once again become untethered from productivity gains.

Here's looking at Euclid

With a general election due by October 2019, the government could roll back even more reforms in order to win the support of interest groups. Economists suspect that both financial markets and creditors pay more attention to the fiscal targets being pursued by Mr Tsakalotos. That leaves important and politically difficult reforms by the wayside.

The road is still uphill. "We have a great history," Mr Vourvoulakis says in Athens, as he drives through the old town. "But I don't know if we have a good future." ■

Consumer lending

Buy now, pay later

A crop of tech startups are reviving an old financial product

AMERICANS shopping for a mattress online may find the selection at Casper, a New York-based mattress startup, somewhat lacking. Unlike brick-and-mortar shops, which offer dozens of models, the startup sells just three. And yet Casper's customers are spoiled for choice at the till. Those who cannot afford to pay with a debit or credit card, or PayPal, can pay by instalments over six to 12 months. Those who make payments on time can enjoy the service free.

Such "point-of-sale" loans, which have been around for decades in one form or another, are becoming increasingly popular in America. Consumers who might previously have financed big-ticket purchases such as furniture, electronics or home-improvement projects with a credit card are now opting to borrow at the checkout, often with an initial 0% interest rate. These short-term credit products were once the domain of big banks like Wells Fargo, which finances consumer purchases, and Synchrony Financial, an issuer of store-branded credit cards. Now tech startups are entering the market with innovative techniques for underwriting and approving potential borrowers, often in seconds.

Demand is driven, in part, by younger consumers. Many young Americans tell pollsters that they dislike big banks. And they seem to have been scared off revolving credit by the financial crisis; according to the Federal Reserve Bank of St. Louis, those aged 20-35 hold about a third less credit-card debt than the same age cohort did in 2001. But they are willing to borrow over a fixed term for specific purchases such as a phone or car.

Some traditional banks have piled into the point-of-sale market. In 2015 Citizens Financial Group, a regional bank, began providing instalment loans to customers upgrading their iPhones at Apple stores. Its portfolio of such merchant-financing loans grew from \$700m to \$1.2bn over the past year. Millennials toting iPhones are not the only ones borrowing more. In the first quarter of 2018, personal-loan balances in America surged by 18% year-on-year to \$120bn, according to TransUnion, a credit-scoring firm (see chart). Credit-card debt, meanwhile, rose by just 6%.

Some new entrants offer credit mainly through online merchants. Many target affluent youngsters with simple borrowing terms and partnerships with high-end brands. Affirm, an online lender based in

Higher purchase

United States, unsecured personal-loan balances outstanding, first quarters, \$bn



San Francisco, was founded by Max Levchin, who co-founded PayPal. It has agreements with 1,500 online retailers, including Nest, which sells smart thermostats, and Peloton, which sells internet-connected exercise bikes.

Affirm's loans, which typically range from \$500 to \$5,000, tend to carry higher interest rates than traditional credit cards. But the firm says borrowers end up paying less because they are not subject to hidden fees or compound interest, and have a set pay-off date. Its figures suggest that merchants using the service see revenue increase by 7-12% thanks to shopping baskets that are bigger and less likely to be abandoned before checkout is complete.

Other lenders partner with brick-and-mortar sellers. GreenSky, an Atlanta-based lender founded in 2006, arranges financing for home improvements, elective medical procedures and other pricey items. Rather than lend the money, it matches merchants like Home Depot with banks like SunTrust and Regions Financial to finance their loans. Loans are arranged face-to-face by the retailer or contractor making the sale, cutting the risk of fraud. GreenSky, which makes money by charging fees to both merchants and banks, earned \$326m in revenue and \$139m in net income in 2017. It went public in May and is now valued at \$3.5bn, making it America's fourth most valuable fintech company.

Investor enthusiasm for online lenders can be fickle, however. LendingClub and OnDeck Capital, two lenders that went public in 2014 promising to shake up the banking industry, have struggled with high sales-and-marketing costs, and difficulty finding cheap and stable funding for loans. Since its initial public offering, LendingClub's share price has fallen by 82%; OnDeck's has dropped 76%. Neither company turned a profit in 2017. GreenSky, which bills itself as a technology company rather than a lender, hopes to fare better by partnering with traditional banks rather than trying to beat them at their own game. That may not be as striking as the strategy of other fintech startups. But it has the advantage that it is already profitable. ■

Index investing

How low can you go?

A milestone is reached with the first zero-cost tracker funds

SINCE 1975, when the first retail investment fund that aimed simply to mimic a stockmarket index was launched by Vanguard, such “passive” funds have squeezed margins and profits right across the asset-management industry. On August 1st that trend reached its logical endpoint with the launch of two zero-cost tracker funds by Fidelity, a Boston-based firm built on active investing that is the industry’s fourth-largest, with \$2.5trn under management. With no minimum investment required and an expense ratio (that is, net cost to investors) of zero, it will further shake up an industry that was already undergoing a major structural shift.

Fidelity’s competitors immediately felt the heat. Shares in BlackRock, the world’s largest asset manager and largest provider of passive exchange-traded funds (ETFs), closed 4.7% down on the day, as shareholders digested the implications for its business model. Those in Invesco, the fourth-largest ETF provider, dropped by 4.2%, and those in State Street (which, though the third-largest ETF provider, also has many business lines besides asset management) by 1.2%.

Competition had already driven charges on index-tracking mutual funds and ETFs to very low levels. Fees for the index-tracking mutual funds at Vanguard and Charles Schwab most similar to Fidelity’s new offerings are just 0.14% and 0.09% respectively. The ETF versions of those funds cost even less, at 0.04% and 0.03%. There are economies of scale in index investing, since costs do not rise in line with assets under management.

Without skimming any explicit fee from the new funds, Fidelity will have to find other ways to make money, such as by lending shares to short-sellers for a consideration. It may also see the new funds as loss-leaders, hoping that investors will eventually migrate to its other offerings. To make that more attractive it has cut fees for its existing stock and bond index funds by around a third, which will save investors \$47m annually, and done away with minimum investments across the board. And it surely hopes it will be able to “upsell” customers more lucrative products, such as financial advice.

That it was Fidelity that went to zero first was something of a surprise. Its reputation was made on the prowess of its stockpickers. The move therefore reveals just how much active management in

shares is suffering. Over the past decade, an average of 87% of actively managed American equity funds underperformed their benchmark indices. Average active-management fees in 2017 were 0.57%.

Active-only asset managers have tried to respond to pressure from passive funds by consolidating. Examples include mergers between Janus, an American fund house, and Henderson, an Anglo-Australian firm; and in Britain, between Aberdeen Investments and Standard Life. But it is hard to see a reversal of the shift toward passive management, which, by some estimates, already approaches half of all assets in managed American equity funds. Fidelity’s move is likely to prompt further consolidation among passive-fund providers, too, even though many are already

giants. After all, to make a decent income from such activities as lending shares to short-sellers means doing it at scale.

In recent years Fidelity has lost business to rivals who had moved earlier to focus on passive investing and to squeeze costs. It was already shifting its emphasis. In June a net \$5.6bn flowed into its passive fund offerings, even as it \$2.6bn net flowed out of its active strategies. Its new zero-cost funds will surely accelerate this trend.

The price war in asset management was already fierce. Will anyone go to the wall? At the very least, it is hard to imagine that Fidelity’s rivals can hold off from lowering or even scrapping their fees, too. As free current accounts show, once something is provided for nothing, it is very difficult ever to start charging again. ■

Myanmar’s state-owned enterprises

Living fossils

THAGAYA

The bureaucratic leviathans show how much economic reform is still needed

NOTHING has been made in the engine factory in Thagaya, in the south of Myanmar, since April last year. Yet around 350 employees still turn up each day. In 2016 government-owned factories like this one made a loss of more than \$200m.

When Myanmar moved from military dictatorship to a form of democracy, its new government embarked on a series of reforms. Since 2011 it has passed at least two dozen laws related to the economy. Foreign investment, much of it from China, has helped the economy to grow at around 7% a year. But it remains one of the region’s poorest countries. And vast swathes of the economy remain untouched.

State-owned enterprises (SOEs) employ

about 145,000 people and provide about half of government revenue, excluding foreign aid. They collect around 12% of GDP in fiscal revenue and spend about the same. But the junta-era law that regulates them is a vaguely worded two-page document that is silent on what they are supposed to do. It simply states which sectors are government monopolies and promises prison to anyone who encroaches.

Myanmar now has 31 SOEs. Some are decrepit industrial complexes like that in Thagaya, but others deal with juicy sectors such as airlines, gems, oil and gas, telecommunications and timber. Their economic impact is huge. They not only pursue commercial activities; most also collect taxes and regulate the sectors they operate in.

A recent report by two think-tanks, the local Renaissance Institute and the National Resources Government Institute, in New York, details their freedom from government oversight. The SOEs have no specific performance targets or formal appointment procedures for senior staff—most are run by former army men. Their accounts are kept by hand, in physical books. Audits consist of nothing more than checking bank statements against the figures they provide. Only their total budgets are reported to members of parliament, who do not get to see detailed line items.

Exceedingly conservative accounting rules require them to set aside 55% of their profits. Myanmar Gem Enterprise, for instance, holds enough cash to run itself for 172 years, earning no interest in a state-owned bank. In January 2017 SOEs held ►



► \$8.6bn. Officials admit that much of that money is sitting idle.

Myanmar's SOEs are not unique in the region in being legacies of dirigiste military rule. But they are probably the most opaque and badly run. Other countries generally require their counterparts to publish annual reports. Thailand's have adopted international reporting standards. A few in the Philippines have private minority shareholders. Malaysia uses performance indicators for some SOEs' managers. In China bosses' pay is linked to performance (which, admittedly, encourages the fiddling of statistics).

There are a few glimmers of improvement. Myanmar's government has joined an Asian forum on how best to monitor SOEs. It recently rid itself of a finance minister, Kyaw Win, who had been accused of corruption and admitted in 2016 that his PhD was fake. His replacement, Soe Win, may do more to promote oversight. He used to work for Deloitte, a global accounting firm, and sits on the board of the Renaissance Institute.

But formidable obstacles remain. Different ministries are responsible for different SOEs and the finance ministry has no control over their spending. Only Aung

San Suu Kyi, Myanmar's de facto leader, has the authority to pass reforms. But the economy is not her priority and she tends to tread carefully when it comes to the armed forces' interests.

MPS from the lower house's public-accounts committee are keen to look into the mess, says Aung Min, their chair. But they lack administrative support and, in many cases, expertise. And few other parliamentarians would welcome scrutiny of zombie factories in their constituencies. Workers in Thagaya, for their part, feel secure. The factory cannot close, one says, "because it belongs to the government". ■

Buttonwood | Made in Japan

Its economic heft has declined, but Japan's influence on global financial markets is still strong

IT IS the summer of 1979 and Harry "Rabbit" Angstrom, the everyman-hero of John Updike's series of novels, is running a car showroom in Brewer, Pennsylvania. There is a pervasive mood of decline. Local textile mills have closed. Gas prices are soaring. No one wants the traded-in, Detroit-made cars clogging the lot. Yet Rabbit is serene. His is a Toyota franchise. So his cars have the best mileage and lowest servicing costs. When you buy one, he tells his customers, you are turning your dollars into yen.

"Rabbit is Rich" evokes the time when America was first unnerved by the rise of a rival economic power. Japan had taken leadership from America in a succession of industries, including textiles, consumer electronics and steel. It was threatening to topple the car industry, too. Today Japan's economic position is much reduced. It has lost its place as the world's second-largest economy (and primary target of American trade hawks) to China. Yet in one regard, its sway still holds.

This week the board of the Bank of Japan (BOJ) voted to leave its monetary policy broadly unchanged. But leading up to its policy meeting, rumours that it might make a substantial change caused a few jitters in global bond markets. The anxiety was justified. A sudden change of tack by the BOJ would be felt far beyond Japan's shores.

One reason is that Japan's influence on global asset markets has kept growing as decades of the country's surplus savings have piled up. Japan's net foreign assets—what its residents own abroad minus what they owe to foreigners—have risen to around \$3trn, or 60% of the country's annual GDP (see top chart).

But it is also a consequence of very loose monetary policy. The BOJ has deployed an arsenal of special measures to

battle Japan's persistently low inflation. Its benchmark interest rate is negative (-0.1%). It is committed to purchasing ¥80trn (\$715bn) of government bonds each year with the aim of keeping Japan's ten-year bond yield around zero. And it is buying baskets of Japan's leading stocks to the tune of ¥6trn a year.

Tokyo storm warning

These measures, once unorthodox but now familiar, have pushed Japan's banks, insurance firms and ordinary savers into buying foreign stocks and bonds that offer better returns than they can get at home. Indeed, Japanese investors have loaded up on short-term foreign debt to enable them to buy even more. Holdings of foreign assets in Japan rose from 111% of GDP in 2010 to 185% in 2017 (see bottom chart). The impact of capital outflows is evident in currency markets. The yen is cheap. On The Economist's Big Mac index, a gauge based on burger prices, it is the most undervalued

of any major currency.

Investors from Japan have also kept a lid on bond yields in the rich world. They own almost a tenth of the sovereign bonds issued by France, for instance, and more than 15% of those issued by Australia and Sweden, according to analysts at J.P. Morgan. Japanese insurance companies own lots of corporate bonds in America, although this year the rising cost of hedging dollars has caused a switch into European corporate bonds. The value of Japan's holdings of foreign equities has tripled since 2012. They now make up almost a fifth of its overseas assets.

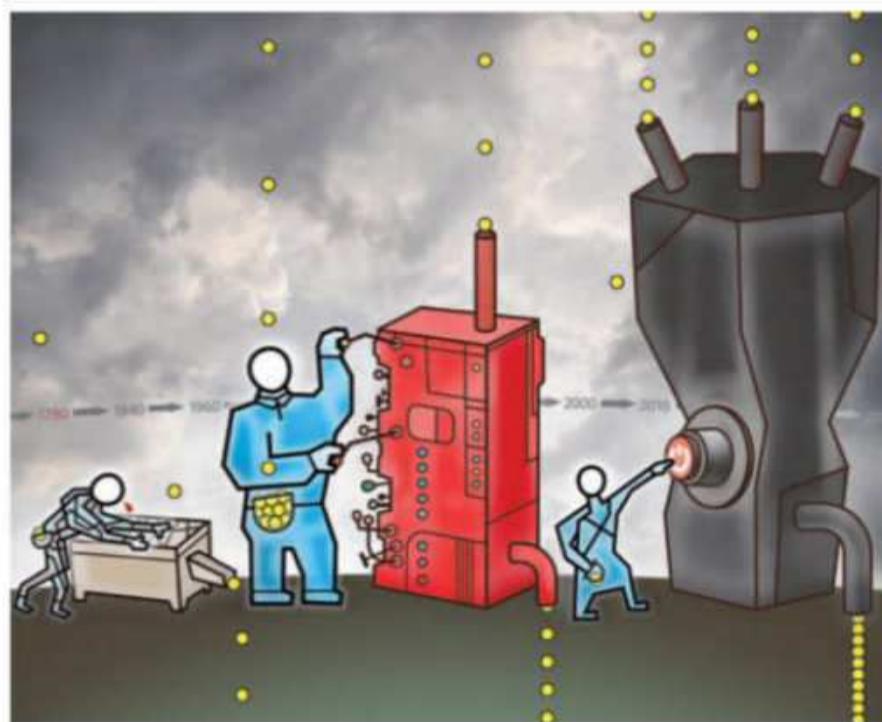
What happens in Japan thus matters a great deal to an array of global asset prices. A meaningful shift in monetary policy would probably have a dramatic effect. It is not natural for Japan to be the cheapest place to buy a Big Mac, a latte or an iPad, says Kit Juckes of Société Générale. The yen would surge. A retreat from special measures by the BOJ would be a signal that the era of quantitative easing was truly ending. Broader market turbulence would be likely. Yet a corollary is that as long as the BOJ maintains its current policies—and it seems minded to do so for a while—it will continue to be a prop to global asset prices.

Rabbit's sales patter seemed to have a similar foundation. Anyone sceptical of his mileage figures would be referred to the April issue of *Consumer Reports*. Yet one part of his spiel proved suspect. The dollar, which he thought was decaying in 1979, was actually about to revive. This recovery owed a lot to a big increase in interest rates by the Federal Reserve. It was also, in part, made in Japan. In 1980 Japan liberalised its capital account. Its investors began selling yen to buy dollars. The shopping spree for foreign assets that started then has yet to cease.



Free exchange | Homespun economics

The Industrial Revolution could shed light on modern productivity



HOW much yarn per day could an 18th-century British woman spin? Such questions are catnip for economic historians, whose debates typically unfold unnoticed by anyone outside their field. But a running debate concerning the productivity of pre-industrial spinners, and related questions, is spilling beyond academia. Each probably produced between a quarter of a pound and a pound of yarn a day, the historians have concluded. But at issue is something much more profound: a disagreement regarding the nature of technological progress that has important implications for the world economy.

Economic growth of the sort familiar today is a staggering departure from the pattern of pre-industrial human history. More than a century of study has not resolved the question of why it began where and when it did. This is a matter of more than historical interest. Weak growth in productivity has economists asking whether humanity is running out of ideas, and whether it is losing its ability to turn new technologies into rising incomes. A clearer understanding of what exactly happened in 18th-century Britain could shed light on the matter.

Those studying the productivity slowdown typically focus on supply-side factors such as workers' skills and investment in research and development. Explanations of the Industrial Revolution often draw on similar factors, namely the characteristics of Britain that made it a fertile place to apply new technologies to production. Some scholars emphasise institutional features such as the emergence of stable parliamentary democracy, the rule of law and secure property rights. Others credit Britain's capital markets, communities of skilled tinkerers and cultural habits that encouraged disciplined effort and entrepreneurial ambition.

But if such factors are necessary for industrialisation, they do not appear to be sufficient. Though other parts of north-west Europe shared many such features with Britain, it was in Britain alone that industrialisation began. Economic historians have therefore considered the "demand side" of industrialisation: the conditions under which firms found it worth experimenting with unproven technologies. In particular, scholars are embroiled in a debate concerning the "high-wage hypothesis" put forward by Robert Allen.

Over the past two decades Mr Allen has argued that the key to

Britain's industrialisation lies in the expansion of commerce and trade that preceded it. That had pushed up wages for British workers, while pay elsewhere in Europe stayed flat. On the eve of the Industrial Revolution, British firms operated in a market where coal was cheap but labour was dear. It thus made sense for firms to seek ways to use coal-fired machines to wring more out of their workers. At British wage rates, tinkering with new spinning or weaving equipment made sense, Mr Allen writes, whereas in France, say, new modes of production were less likely to pay off. Not until decades of mechanisation and innovation in Britain had boosted the efficiency of new equipment was it worth adopting on the continent.

Mr Allen's work has prompted a wave of research delineating the contours of the high-wage argument. No systematic income data existed at the time. Scholars must instead glean wage information wherever history chanced to leave it. They must determine how productive workers were (hence the debate about daily spinning rates), and whether they were typical of most labourers. And then they must work out what such workers bought with their earnings, and at what price. Consumption of expensive wheat bread might imply that real wages (that is, adjusted for living costs) were low—unless those workers could have bought cheaper bread, made from oats or barley, which would suggest they earned enough to afford a luxury.

This work has galvanised efforts to understand a critical period in economic history. New research by Jane Humphries and Benjamin Schneider, for example, reveals information on the economic role of women and children, who earned less than men, in the spinning industry. Judy Stephenson has uncovered new details about construction workers in London and shown that many estimates of working hours are probably too high.

Those who disagree with Mr Allen's thesis try to find evidence to support a rival, older, theory that the impetus to industrialise came from low wages rather than high ones. In this story vast pools of cheap labour in pre-industrial societies were a potentially lucrative resource and anyone who could put it to better use stood to benefit enormously. In Mr Allen's narrative, spinners' wages, though very low by modern standards, were high enough to motivate the development and deployment of equipment like the spinning jenny. For Ms Humphries, however, capitalists found the spinning jenny attractive because it enabled them to squeeze more out of the cheap labour of women and children.

Tinker tailor

For now Mr Allen's theory looks more compelling, though further work might easily alter the balance. Yet the central role of labour costs in both theories has lessons for economists studying productivity growth today. They tend to treat wage growth as a function of technological progress, rather than an influence on it. The ability to produce new ideas surely depends upon supply-side factors, from the number and quality of engineers a society produces to the competitive environment facing large firms. But if productivity is growing slowly, that might also be because labour costs discourage experimentation with new technologies.

Such experiments are slow, risky and expensive. When profits are high and wages stagnant, they are hardly worth the trouble. Until wages become too high, human burger-flippers and call-centre workers, like hand-spinners, will do. ■



Why Buy When You Can Rent

Manhattan's Finest Residences • No Fee

1 BRs fr \$3,395 • 2 BRs fr \$4,995 • Conv. 3 BRs fr \$5,995 • 3 BRs fr \$6,995

Live the Glenwood lifestyle in these fine New York City neighborhoods:

TriBeCa • FiDi • Battery Park North • Fashion District • Lincoln Square

Murray Hill • Midtown East • Upper East Side

GLENWOOD

+1 646-904-8862 | GLENWOODNYC.COM

All the units include features for persons with disabilities required by FHA | Equal Housing Opportunity



Chateau in Normandy, France For Sale - EUR 1.9m

18th century French chateau in the heart of Calvados - Normandy, France, set within 12 acres (4.8 hectares) of walled parkland.

The grounds feature a fountain, well-manicured lawns, flower gardens, woods and tennis court.

The chateau is comprised of 9 bedrooms, 8 bathrooms and 3 living rooms, with listed hand painted wall murals, and has been beautifully restored by the current owner/occupier.

Facilities are in place both inside and outside to host weddings and events.

Additionally there are numerous outbuildings, including a 3 bedroom guest cottage, two 1 bedroom apartments and office space.

The property is surrounded by fields, and is 30 minutes from the sea, 2.5 hours from Paris, and 40 minutes away from both Caen and Deauville international airports.

<http://www.lemesnilo.fr/>
Contact: Guillaume +447532003972
guichaba@gmail.com



CHAMONIX CHALET FOR SALE

Superbly appointed chalet with amazing views of the Mont Blanc range. 3 bedrooms plus. Large terrace with superb views. Top floor can be let independently of the main chalet.

In the best part of Chamonix. Enjoys winter sun when much of the valley is in deep shadow. 5 minute level walk to the Brevent ski lift. Euros 2.2m for quick sale

More details www.amazing-chamonix-chalet-for-sale.com

Call +44 7770 450 859 or +33 683 772 619



Mont Blanc from terrace

The Economist August 4th 2018



PRIME & CENTRAL INVESTMENT

- Central location in Baixa, 1 min walk from Av. da Liberdade
- Views facing both Rossio & Praça da Figueira squares
- Popular area with excellent short-term rental prospects
- Spacious apartments with expected capital appreciation
- Low mortgage rates: 2.3% fixed for 10 years (up to 70% LTV)

1-2 bedroom apartments / Price on application

+44 (0) 20 7471 4500
athenaadvisers.com/ec-baixa

 ATHENA ADVISERS



Wildfires

Forewarned is forearmed

SANTA BARBARA

Software can model how a wildfire will spread—and how to stop it happening

LEST anyone doubt the speed with which a brush fire can strike, consider how rapidly flames engulfed Mati, a seaside resort near Athens, on July 23rd. Less than 90 minutes after fire was reported, flames had reached densely populated areas. Hordes of people fled into the sea, the only refuge, to escape. At least 91 were killed.

That toll could have been avoided, says Gavriil Xanthopoulos, a wildfire expert at Greece's Ministry of Rural Development and Food, if proper use had been made in advance of fire-simulation software. Fed with data on the area's vegetation, building materials, paved surfaces, paths to the sea and weather patterns, such software would have suggested, he says, those places where trees and brush should have been removed, roads widened and evacuation paths built—not to mention how zoning laws could have been better devised in the face of fire risk.

Greece, Dr Xanthopoulos laments, has been slow to adopt such software. Others are not so dilatory. America's Forest Service, for instance, uses a model developed by Esri, a geographic-information firm in Redlands, California, to assess fire risk. This model feeds on data on the distribution and types of trees, bushes and other vegetable ground cover, and on construction materials used in an area.

These data are collected mainly by satellites and aircraft, but rangers and crews of firefighters contribute detail from the ground. According to Chris Ferner, a wild-

land-fire technology specialist at Esri, even entering the diameters of tree trunks and the sites of clogged culverts (which alter patterns of water flow) is grist to the software's accuracy.

Fire! Take aim...

Once a piece of fire-forecasting software such as Esri's knows how much inflammable stuff there is on the land, it can bring in data on rainfall, snowfall, sunshine, temperature and the like, to work out how this might change in the future, as well as how much moisture the vegetation holds. It can also take into account past fires and the lie of the land. A south-facing slope, for example, dries out faster (at least, in the northern hemisphere) than one facing north.

Another model, developed at the University of California, Santa Barbara, by Christina Tague, is called RHESSys. Dr Tague has loaded RHESSys with fuel- and moisture-data for roughly 800km² of wildland, most of it in California. This shows forestry officials where best to bulldoze fire breaks, cut down trees or clear scrub.

Rod Linn of Los Alamos National Laboratory, in New Mexico, who helped design yet another piece of modelling software, FIRETEC, describes this as "engineering" the behaviour of wildfires. FIRETEC is so sophisticated that it even models how the flames of a planned burn, intended to clear vegetation in a controlled way, will be fed by the wind they generate. This lets users (who include the forest ser-

Also in this section

65 Glasses and productivity

66 Assessing chemicals for safety

66 Coral that eats jellyfish

For daily analysis and debate on science and technology, visit

Economist.com/science

vices of Canada and France, as well as the United States) design precise patterns for planned burns, in order to clear surface vegetation without destroying tree canopies.

All of which is well and good for the purposes of prevention. But, if prevention fails, the question remains of whether software can then be used to forecast a fire's spread, assisting those fighting it, and helping those threatened get out in time.

This is a more challenging problem, for forecasting a fire's behaviour requires a staggering number of calculations. FIRETEC, for example, divides the fire-threatened space under analysis into one-metre cubes called voxels, and then crunches estimates for each voxel of fuel, moisture, temperature and airflow, taking into account drag created by foliage and other objects. As a simulation progresses, the values in each voxel affect adjacent ones, thus creating feedback which produces impressive verisimilitude. Unfortunately, it does not do so quickly. FIRETEC's simulations run more slowly than real fires burn, making it useless for real-time forecasting.

To calculate, in a useful amount of time, the spread of a fire that has already started thus requires compromise. A model called CAWFE has voxels with sides 370 metres by 370 metres by ten metres. That makes it less accurate than FIRETEC, but according to Janice Coen, of the National Centre for Atmospheric Research, in Boulder, Colorado, who is leading the development of the software, it spits out a forecast of a wildfire in just a quarter of the time that the fire takes to burn.

Such forecasts are about to get better. Using infrared images captured by aircraft, Dr Coen is training CAWFE to predict when and where a wildfire is likely to produce several infrequent but terrifying types of tendrils that reach out beyond the fire line. These include "fire whirls" (see picture on next page), which can snap and hurl trees; ►



A twisty-turny thing

► pairs of counter-rotating “horizontal roll” fire vortices that form in mid-air but can collapse onto the ground; and “flame fingers” that have smitten firefighters even 100 metres from a fire’s edge.

The most extreme 1% or so of wildfires, however, are likely to remain unmodelable for some time. These include the “explosive” wildfires that ravaged central Portugal last year. On June 17th 2017 wildfires broke out around Pedrógão Grande, near Coimbra. Initially, meteorologists reckoned that these fires would advance at about 3kph, but the soaring flames soon changed direction and accelerated to six times that speed. Sixty-seven people died, nearly half of them trapped motorists.

Flames that rose roughly 100 metres into the sky during these fires generated a gale and searing “pyrocumulus” clouds, a process too complex for today’s best software to model, according to Marc Castelnou, a member of the technical commission that studied the disaster. Francisco Castro Rego, an expert on fire forecasting at the University of Lisbon, reckons that at least two more years of development will be needed to model such fires.

Fire-modelling is, however, getting better all the time. New satellites, with short-wave-infrared sensors, can detect fires as small as a backyard barbecue. Satellites and aircraft with rangefinders that use lidar, an optical version of radar, can map the height of vegetation precisely, which helps forecasting software work out whether a brush fire is likely to ignite trees. As statistics on fires accumulate, new correlations will be identified, such as how fluctuations in average temperature influence burn sizes on a given landscape. Such intelligence will be needed increasingly in the future. Predictions based on the likely effects of climate change suggest that, by the middle of the century, fires will burn twice as much acreage as they do today. ■

Long sightedness

I can see clearly now

Wear glasses. Earn more

“**A**T THE end of the day I would be anxious,” says Anil Awasthi, a 44-year-old garment worker in Delhi, “thinking what mistakes of mine would be pointed out.” He was worried about what was going to happen as his sight deteriorated, until—courtesy of VisionSpring, an American social enterprise—he got reading glasses. “I’m confident now that my work will meet my boss’s expectations,” he says. “I go home satisfied.”

For the rich, the worst consequence of long sightedness is having to wear the world’s most ageing accessory. For the poor, things are more serious. “It’s the 42-year-old seamstress or tailor,” says Jordan Kassalow, VisionSpring’s founder. “If they can’t see, they can’t do their jobs, and if they can’t do their jobs they end up breaking rocks by the side of the road.”

The first randomised control trial to measure the impact on productivity of reading glasses was carried out recently in a tea estate in Assam, in north-eastern India, paid for by Clearly, a charity. Nathan Congdon, a professor of ophthalmology at Queen’s University, Belfast, and his colleagues gave spectacles to half of a group of 751 tea-pickers aged over 40. The other half got none. Over 11 weeks, the productivity of those whose sight had been cor-

rected rose by 39%. It rose for the others, too, showing the importance in such trials of having a control group. But that rise was only 18%. The rise in productivity for those with glasses was the largest caused by a medical intervention that has ever been shown in such a trial (others have been of mosquito nets and micronutrients). Since tea-picking is piecework, productivity translates directly into money.

Before Dr Congdon’s trial, none of the 751 had worn glasses. Given the potential gain in income, and the cheapness and simplicity of spectacles, that seems odd. It is not, however, unusual. Some 1.1bn people suffer from uncorrected long sight. In this, as in many areas of health, both governments and the market fail the poor.

Poverty is one explanation. Liberia, says Dr Congdon, has but two eye doctors, both in the capital. Even in China, which is far better-served, half of those with poor sight do not have the glasses they need. There are social issues: some people worry that spectacles make them look ugly. There are regulatory hurdles, too. In some countries, only licensed operators may sell glasses, so hardly anybody does. And because long sight creeps up on people, victims get used to it: “They probably thought, ‘you get to 50, you can’t pick like you used to,’ ” says Dr Congdon of the tea-pickers. “But by the end of the trial, their productivity was as good as the youngsters.”

VisionSpring is trying to nudge the market to work better by using the “Avon-lady” model. It introduces middle-aged women to glasses, then provides them with the wherewithal to sell them door-to-door. That idea is spreading slowly, but clear sight is a surprisingly hard sell. ■



Looking to the future

Environmental safety

Hazchem or not?

BOSTON

It should soon be easier to find out without killing animals

THE number of chemicals that might come into contact with a human being is staggering. The European Chemical Agency (ECHA) recognises over 130,000 molecules. Its American counterpart recognises 85,000. Testing all of these for toxicity is well-nigh impossible. Animal testing, in particular, is controversial, slow, costly and often cruel. Nor is it reliable. Its results are often irreproducible.

Things would be better if there were some way to predict the likely toxicity of a substance before animals get involved. That would permit the riskiest-looking to be prioritised. To this end, toxicologists like Thomas Hartung of Johns Hopkins University, in Baltimore, have been trying for years to find objective links between a chemical's molecular structure and its biological activity. And now Dr Hartung thinks he has one. It relies, as do so many advances these days, on machine learning.

A way to link molecular structure and biological activity does already exist. It is called "read-across" and attempts to infer the hazards of an untested chemical by comparison with those of a tested one with a similar structure. In 2015 read-across was accepted as an alternative to animal testing for meeting the ECHA's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) requirements. But read-across depends on expert analysis and opinion, making it subjective and also difficult to generalise beyond small, well-studied groups of chemicals.

Dr Hartung believes machine learning, with its power to find patterns in large quantities of data, could help close the gap. His right-hand man in this work is Thomas Luechtfeld, a computer scientist who joined him as a PhD student in 2013. To tap into machine learning's capabilities, the two of them first needed lots of good data. When Mr Luechtfeld started work, these were unavailable. He had adequate data for only about 250 chemicals. In 2014, however, he began to build a database that overcame this limitation, by downloading 816,048 toxicity studies on 9,801 compounds registered with REACH.

He spent a year training an algorithm to read these studies, process the text they contain and extract pertinent information. This algorithm automatically correlates chemical features like the presence of particular groups of atoms with measures of hazard such as the median lethal dose in an animal test, allowing all chemicals in

the database to be compared. The result, which the two researchers reported in 2016, did indeed provide some insight into the prevalence of different types of toxicity. But to make more general predictions, they needed a larger data set still.

Mr Luechtfeld has therefore spent the past year scouring public data sets like those from PubChem, which is run by America's National Institutes of Health. He now has relevant data on 80,908 chemicals and is able to correlate their features with 74 types of hazard. These are not just medical threats. They also include such things as fire hazard and potential to harm the ozone layer.

His latest algorithms focus on nine types of toxicity, including skin irritation, eye irritation and mutation-causing potential, which are conventionally assessed by animal trials. Using data from tested substances these algorithms are able to estimate the toxicity of untested ones. Instead of a single number, such as the median lethal dose in an animal test, they provide a probability that a substance is hazardous

enough to worry about. Anything that scores above 0.8 should be regarded as a problem without further ado. Anything below 0.2 can be regarded as safe. Chemicals scoring between those values should be treated with caution until more data come in to push their scores up or down.

Mr Luechtfeld is now Dr Luechtfeld, having obtained his PhD a few weeks ago. He and Dr Hartung claim, in a recent paper, that the algorithm's assessments are more accurate than animal testing. By this they mean that if a given molecule's toxicity, as predicted by the algorithm, is compared with its read-across result, the two are more likely to coincide than are two independent animal tests on that molecule.

They are now waiting to hear from the authorities whether their method will be formally adopted, alongside conventional read-across, as a legal alternative to animal tests. Regardless of whether it is, though, what they have come up with should help understanding of the underlying mechanisms of toxicity. And that will be an important step forward. ■



Marine biology

The biter bit

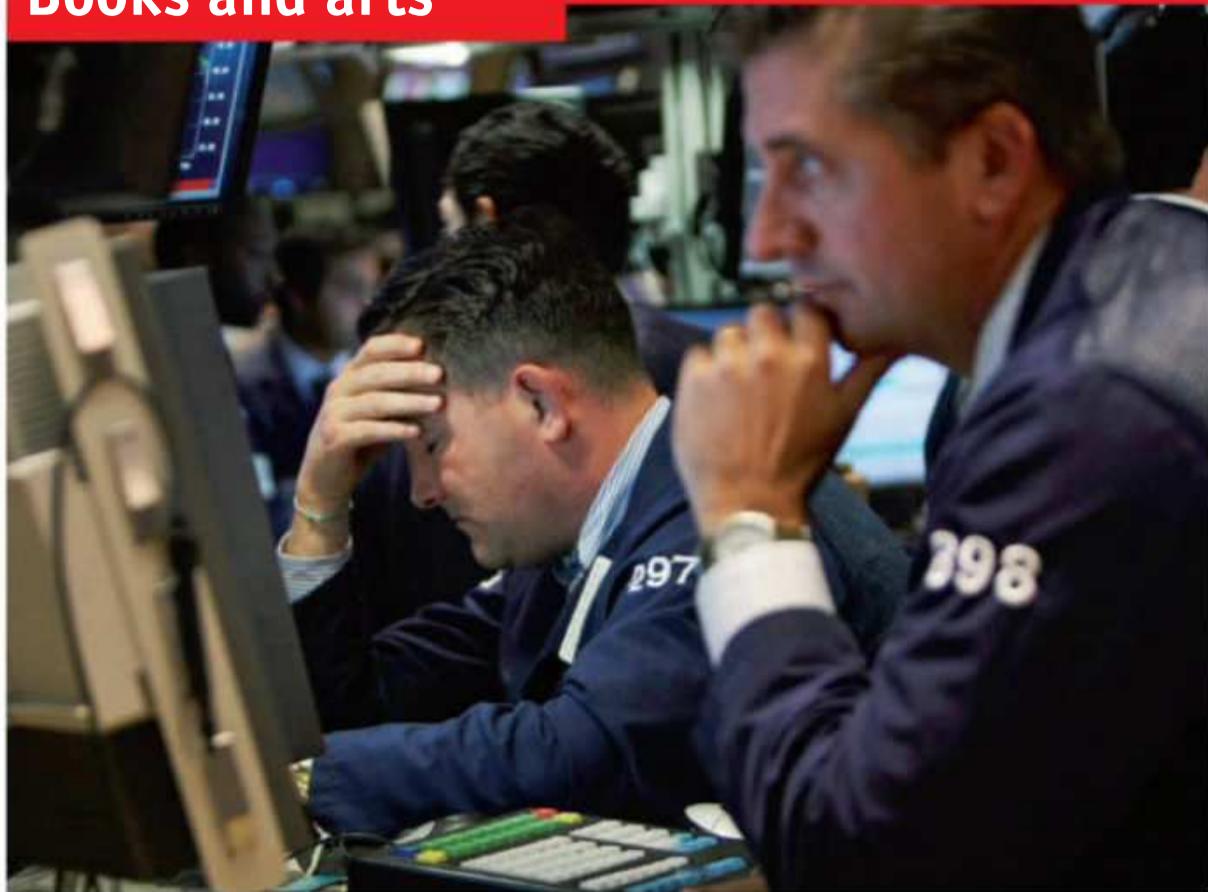
Corals eat jellyfish

FROM the human point of view *Pelagia noctiluca* is an enemy. It is a jellyfish, abundant in the Mediterranean Sea, that is the chief cause of stings to swimmers in that popular holidaymakers' destination. But, as this picture shows, *Pelagia noctiluca* has enemies of its own. The other creatures in shot are polyps of *Astroides calyculus*, a type of coral.

Normally, *Astroides calyculus* feeds on small creatures of the plankton. But researchers led by Tomás Vega Fernández of the Zoological Station in Naples, diving off the coast of Italian islands such as Pantelleria, have shown that individual coral-polyps sometimes collaborate to

trap and consume jellyfish. They catch hold of various parts of their prey to stop it swimming away, and slowly dismember it. As the team describe in a paper in *Ecology*, each polyp then consumes part of a tentacle or of the pulsating umbrella the jellyfish uses to swim.

Corals are, essentially, sea anemones with stony cases. Both they and jellyfish belong to the phylum of animals known to zoologists as Cnidaria, the characteristic feature of which is stinging cells called nematocysts. Cnidarians use these to disable their prey. In this example, then, it is a case not so much of "the biter bit" as "the stinger stung".



Ten years on

The last crash, and the next

A monumental account of the crisis and its aftermath

WHEN asked how he went bankrupt, one of Ernest Hemingway's characters replies: "Two ways. Gradually and then suddenly." That's rather how the crash was for the world. There was an extended build-up, with cracks in the system emerging during the course of 2007. Then there was the sudden shock, when Lehman Brothers collapsed in September 2008 and the global banking system teetered on the edge. The tenth anniversary of that frightening moment approaches.

There were some impressive takes from authors in the immediate aftermath of the turmoil, such as Andrew Ross Sorkin's "Too Big to Fail" and Michael Lewis's "The Big Short", which was made into an Oscar-winning film. "Inside Job", a documentary, was a scathing attack on the culpability of the finance industry for the crisis. And a new adaptation of a three-part play about the history of Lehman has just opened at the National Theatre in London.

Adam Tooze, a historian noted for his works on the interwar period, is aiming to be less entertaining than authoritative: he takes on the financial and economic history of the last decade in a monumental tome of nearly 700 pages. Yet with the events it covers so recent and so dramatic, the book is as much reportage as historical analysis.

Four big themes emerge from Mr Tooze's account of the post-2008 era. The

Crashed: How a Decade of Financial Crises Changed the World. By Adam Tooze. *Viking; 720 pages; \$35. Allen Lane; £30*

first was the immediate post-crisis response, in which the banks were rescued and both the monetary and fiscal taps were loosened. The second was the euro-zone crisis, which hit Greece and Ireland hardest, but also affected Portugal, Italy and Spain. The third was the shift in the developed world after 2010 to a more austere fiscal policy. The fourth was the rise of populist politics in Europe and America.

Mr Tooze sides with most economists in taking the view that the immediate post-crisis response was necessary, but unfortunate in that executives in the banking industry paid too low a price for their folly; that Europe was slow and narrow-minded in dealing with the peripheral countries; and that the switch to austerity was a mistake. Taken together, the backlash against bankers, frustration with EU governments and the impact of austerity led to the rise of populism, the election of Donald Trump and the Brexit vote.

A big part of the problem, as the author points out, was a failure of political leadership. European politicians initially dismissed the crisis as an American problem, generated on Wall Street, even though Eu-

Also in this section

68 How to make a great orchestra

69 Satire and the Soviet Union

69 Love, war and Indian independence

70 Johnson: The cost of an accent

For daily analysis and debate on books, arts and culture, visit

Economist.com/culture

rope's banks also had balance sheets stuffed with dodgy loans. Meanwhile in America, the Bush administration got its crisis measures through Congress only with support from Democrats, but bipartisanship stopped the moment Barack Obama took office.

Perhaps the most dangerous failure, though, lies in the unwillingness to deal with problems which lie at the heart of the system and persist today. The finance sector, which caused the crisis, looks remarkably unaltered. Banks may now hold more capital and their bonuses are now tied to longer-term performance. But bonuses are still very high; the average payout on Wall Street last year was \$184,220, just shy of the 2006 record. Scandals over banks' bad behaviour, in areas such as price-fixing, money laundering and mis-selling continue to come to light.

Anyone who fell asleep in 2006 and woke up to look at the financial markets today would have no idea there had ever been a crisis. Share prices in America have repeatedly hit new highs and valuations have been surpassed only in the bubble eras of 1929 and 2000. The interest rates paid by governments and corporations to borrow money are very low by historical standards. In global terms, the amount of debt relative to GDP is about as high as it was before the crisis. As the author points out, it is far from clear that governments will be willing to take decisive action when the next crisis hits.

The debate about macroeconomic policy goes on in much the same way as it always has. Those who believe that governments can afford to borrow and spend more are still arguing with those who think that debt is already too high. Those who want central-bank policies to return to normal (higher rates, no more purchases) are

► of government bonds) are still arguing with those who believe that premature monetary tightening will damage a still-fragile economy.

The big change has been in the public mood. The idea that markets, left to their own devices, will efficiently and fairly allocate resources had gained adherents in the 1990s and early 2000s. Centre-left governments, such as Tony Blair's, were happy to leave the financial markets to get on with it. Now those middle-ground politicians are out of office, as voters peel off towards the far-left and nationalist right.

Even the Republican Party in America has swallowed its free-market instincts and is tolerating President Trump's protectionist measures and threatening behaviour towards firms he takes against. Many British Conservatives have been overtly hostile towards those business leaders who express fears about Brexit. The idea that trade makes everyone better off in the long run is no longer universal; indeed Mr Trump sees it as a zero-sum game. These views are showing up in the numbers: global trade has stopped growing much faster than GDP, as it did before the crisis.

This change of mood raises fears about what will happen when another storm hits the world economy. The level of co-operation that occurred in 2008 and 2009, such as when America's central bank made dollars available to its cash-strapped European counterparts, may not be easy to achieve next time around.

Tomorrow's chroniclers will be grateful for Mr Tooze's assiduous research. He leaves no mortgage-backed security uncovered, no collateralised debt obligation unexamined in his effort to produce the most comprehensive account of this complex and gripping subject. The general reader might find it a bit of a slog. It is not that the author cannot see the wood for the trees, more that the forest is so large and dark that it is easy to get lost. Sometimes the broader themes simply get overshadowed by an account of another round of cliffhanger meetings.

Mr Tooze ends by comparing events today with those in 1914, when the world sleepwalked into conflict. But arguably it is the interwar period that is the most pertinent parallel. The armistice ended the first war but the tensions that generated the first conflict simmered and finally exploded once more.

For policymakers, another deadly metaphor is perhaps more appropriate. Central banks brought a global economic heart attack to an end by performing emergency surgery. But the patient has gone back to his old habits of smoking, heavy drinking and gorging on fatty foods. He may be looking healthy now. But the next attack could be even more severe and the medical techniques that worked a decade ago may not be successful a second time. ■

Classical music

How to make a great orchestra

WASHINGTON, DC

An Italian maestro works his magic in America

THE birth of Washington's National Symphony Orchestra (NSO), in 1931, was modest, not to say eccentric. Milton Schwartz, a local violinist, later described being approached by a "seedy-looking person in an old coat" who announced: "I am here to form a symphony orchestra. I just heard you play and I like you very much."

The person was Hans Kindler, then the principal cellist of the Philadelphia Orchestra. Kindler was well-respected, but his reputation—and those of several subsequent music directors, including the Russian cellist Mstislav Rostropovich—never managed to elevate the NSO to the orchestral big league. The New York Philharmonic, the Boston and Chicago symphonies, and the Cleveland and Philadelphia orchestras are all considered superior, as are the Berlin Philharmonic, the orchestra of the Vienna State Opera and London ensembles such as the London Symphony Orchestra (LSO). Until now, at least.

Last year the NSO hired Gianandrea Noseda, an Italian conductor, as its music director. In recent years he has revitalised Turin's Teatro Regio; he is also principal guest conductor of the LSO. Improving an orchestra, Mr Noseda explains, is a less tangible business than turning around a company: "You have to make the musicians feel that they're burning in their hearts and souls." The players, however, cannot simply be instructed to ignite. As Mr Noseda points out, "you don't get there through philosophy, but through rehearsals."

In the ecology of orchestras, being

great, rather than merely good, matters, even if concert-goers might not always be able to tell the difference. A reputation for greatness attracts better musicians and larger audiences, plus invitations to perform at superior outside venues. All that results in more philanthropic giving, the lifeblood of many arts institutions in America (and increasingly in Europe, too).

The stakes make those rehearsals vital. In them, a maestro must work his magic with 100-or-so professionals who may have performed the standard repertoire dozens of times. Mr Noseda says they must feel as though they are performing the world premiere of, say, Beethoven's Fifth Symphony, rather than the millionth rendition of it. To that end, he strives to find undiscovered aspects of each score. After explaining his approach to his musicians, he conveys his ideas mostly through gestures. Above all, he wants the orchestra's members to listen to one another: "I try to create an atmosphere of chamber music."

It seems to be working. As his first season in Washington came to an end, a concert combining Bach with Luciano Berio, an Italian experimental composer, was well-attended, with a strikingly large contingent of 20- to 30-somethings. The orchestra played exquisitely. Gary Ginstling, the NSO's executive director, says that since Mr Noseda's arrival, the NSO has attracted new board members and sizeable donations. Subscription sales are up—the first increase in a decade. Perhaps the big league beckons. ■



Noseda lights the fire



Mikhail Zoshchenko

Satire and the Soviet Union

Sentimental Tales. By Mikhail Zoshchenko. Translated by Boris Dralyuk. *Columbia University Press*; 207 pages; \$30 and £24

AS ANYONE who has tried (and failed) to crack a joke in a foreign language knows, humour is the marker of linguistic mastery. The only thing harder than cracking jokes may be translating them. Perhaps this is why Mikhail Zoshchenko remains a lesser-known Russian writer among English-language readers, despite being one of the Soviet Union's most beloved humorists, a satirist in the best traditions of Gogol. Boris Dralyuk's new translation of "Sentimental Tales", a collection of Zoshchenko's stories from the 1920s, is a delight that brings the author's wit to life.

Zoshchenko's writing career began in the wake of the Russian revolution, following stints in the army during the first world war and on the side of the Red Army in the Russian civil war. He became popular during the 1920s for tales that tackled the contradictions of everyday life during the short-lived liberalism of the New Economic Policy. As Mr Dralyuk notes in his introduction, Zoshchenko "hid behind so many masks that it was impossible to determine whom, exactly, he was mocking."

His contemporaries wondered whose "side" he was on.

Zoshchenko writes around, rather than about the revolution. He observes the minute miseries of the individual life that transcend collective traumas. "As for the limp—which is, anyhow, hardly noticeable—that's just a sore foot," he writes of one of his heroes. "It dates back to the tsarist era." He notes the wild swings of fortune that shift the structure of society: a former landowner is reduced to begging "thanks to the new democratic way of life," he deadpans. And he never loses sight of the enduring traits of human nature, which—pace Marxist ideology—remain resistant to changes in material conditions. What results is less a dystopia than a cutting send up of the promised utopia. "And will it really be that wondrous, this future life? That's another question," he muses. "For the sake of his own peace of mind, the author chooses to believe that this future life will be just as full of nonsense and rubbish as the one we're living."

Such scepticism proved prescient with respect to his own fate. The turn to the official aesthetic doctrine of Socialist Realism in the 1930s forced Zoshchenko into creative compromises, such as participating in a hagiographic book about the construction of the White Sea Canal by Gulag labourers. Though he survived the Stalinist terror himself, he fell foul of the authorities in 1946, and was expelled from the Soviet Writer's Union. He was rehabilitated only after Stalin's death—but upset the party again by proclaiming his innocence in an appearance before foreign students a year later. Zoshchenko's literary output never recovered from the persecution, and he died impoverished and depressed. Yet after his death, reprints of his early works flew off the shelves—an ending fitting of one of his tales, which often leave the reader uncertain whether to chuckle helplessly at life's cruel absurdity or succumb to its ineffable sadness.

In "Sentimental Tales", Zoshchenko trains his sights on the literary scene itself. Assuming the voice of Ivan Kolenkorov, a flailing writer struggling to fulfil the role of the new model Soviet artist, Zoshchenko stumbles and bumbles through dreadful descriptions, turning intentional ineptitude into art. The metafictional device reads as delightfully modern: imagine a beloved sit-com set on the outskirts of the early Soviet Union. Zoshchenko is a master of stylised voices, a subtle observer of language and the ways it reflects social status, and Mr Dralyuk manages to capture both his irony and his lyricism. Following his equally magical renderings of Isaac Babel's "Red Cavalry" and "Odessa Stories" in recent years, Mr Dralyuk has positioned himself as a master of the era's language, injecting welcome new life into an underappreciated school of Russian literature. ■

Indian independence

Midnight at the margins

The Last Englishmen: Love, War and the End of Empire. By Deborah Baker. *Graywolf Press*; 352 pages; \$28. *Chatto & Windus*; £25

ACCOUNTS of the last years of British rule in India in the 1930s and 1940s typically dwell on the actions of powerful figures in Delhi and London. Rival independence campaigners and, especially, British politicians preoccupied by war in Europe helped to cause immense suffering in India. Indians got their freedom but only after a wartime famine in Bengal killed at least 2m. Partition, as Pakistan broke away, displaced millions more and led to deaths of hundreds of thousands.

A few individuals had outsized influence on this. The Harrow- and Cambridge-educated Jawaharlal Nehru co-led agitation for independence and became India's prime minister for 17 years. Urbane, eloquent and an Anglophile, he quipped he was the last Englishman to rule the country. Another Anglophile, Muhammad Ali Jinnah, did most to bring about partition. Winston Churchill's wartime government drew heavily on economic and military help from India but he bitterly resisted its freedom. His peacetime successors oversaw a rushed end to imperial rule.

These rulers and liberators appear in Deborah Baker's narrative, but remain mostly in the background. The result is a refreshingly novel account. She focuses on smaller, but nevertheless noteworthy, fry: mostly characters entering adulthood, passing their time in Calcutta or the Himalayan foothills—occasionally in London—as war and independence loom. These are poets, mountaineers, scientists, romantics, nationalist blowhards, police informers, communist spies and forlorn lovers. Some are Britons, half-hearted servants of empire. They interact with and are influenced by journalists, politicians and thinkers who are eager for self-government but unsure how their lives will change because of it.

The most engrossing of all the characters is Sudhindranath Datta, a young, "handsome and quick-witted" Bengali. He knew his family had prospered through alliances with the occupiers. He also believed English law and literature had brought profound benefits to India. Datta presided over an "adda", a regular gathering of thinkers and writers who mixed "seriousness and silliness" as they discussed culture and politics. He also founded *Pari-chay*, a literary and scientific journal that became an outlet for Bengali men (it was almost always men) of letters. ■

► Ms Baker draws from a rich stock of unpublished memoirs, journals, police reports and other documents, deploying fresh material with a light touch. A prominent character is John Auden, brother of poet W.H. Auden, a geologist and lonely junior colonial official in Calcutta who is disenchanted with his duties. He finds solace—and relief from morale-sapping heat—in trips to the Himalayas. Auden observes soon after arriving in India that “most of what he has been told...is useless or absurd, like the lines and props for a play whose run is long over.”

Auden and Michael Spender, a map-

maker, mountaineer and younger brother of Stephen Spender, a writer, are among the “last Englishmen” of the book’s title. So too, arguably, are the Bengalis who rage against colonial rule during debates at literary salons and yet feel affinity to some parts of Britain, treasuring its universities, writers and freedoms. They are torn over the degree to which they should oppose Britain. At one extreme was Subhas Chandra Bose, a charismatic Bengali who fled to Nazi Germany and fought beside Japanese forces who invaded India. But many Indians, like Nehru, kept some affection for Britain despite its noxious imperial project.

By focusing on less exalted characters, often of a literary bent, Ms Baker produces a highly readable and intimate view of an unusual time and place. At times her fluent writing beguiles: it is easy to forget this is non-fiction and wonder how a novelist might have invented a more satisfying plot for her well-sketched characters. Nancy Spender, wife of Michael and a noted painter, would have made a glamorous foundation for a triangular love story, for instance. Yet as narrative history this is skilful work, showing ordinary individuals as they cope—or buckle—while great geopolitical events twist and shape their lives. ■

Johnson | The cost of an accent

Sounding black has a profound impact on Americans’ lives

BY COINCIDENCE, two big new films feature race, voice and the telephone in America. In Spike Lee’s “BlacKkKlansman”, based on a true story, a black policeman, successfully putting on his whitest-sounding voice, convinces a Ku Klux Klansman he is a supporter. (When the time comes to meet the group in person, he enlists a white partner.) And in Boots Riley’s “Sorry to Bother You”, the down-on-his-luck young black protagonist, Cassius Green (Lakeith Stanfield), takes a job in telemarketing. A wise old black colleague (played by Danny Glover) tells him: “You wanna make some money here? Use your white voice.” And as if flipping a switch, Mr Glover’s character demonstrates it. Cassius learns his own white voice (played by David Cross, a white comedian), and soon he is on a rocket-ride to success.

“Sorry to Bother You” is an absurd magical-realist romp. The truth of race and voice in America is not. The second half of the film is more about free-for-all capitalism than it is about race. But the thread that links them is that sounding black is costly.

Americans know instinctively that “Cassius Green” is more likely to be black than white, and many studies have shown that applicants with typically black names get fewer responses from potential employers than otherwise identical ones with white names. But voices offer clues to race, too, through timbre and accent. In 1999 John Baugh, a black professor at Washington University in St Louis, who grew up in Philadelphia and Los Angeles and has several accents at his command, rang round estate agents and found that they were less likely to offer him properties in white or Hispanic neighbourhoods when he used his black voice. When he used his white voice, he



was mostly offered white neighbourhoods and when he used his Hispanic voice he was mostly offered Hispanic ones.

Two decades on, Kelly Wright, a graduate student at the University of Michigan, carried out a similar study. Ms Wright is the daughter of a German mother and an African-American-Cherokee father, was raised in Knoxville, Tennessee, and has a native command of black, standard American and southern white accents. She made recordings of all three accents, and had a group of 340 subjects rate the person they heard. Speaking in her black accent, she was judged to be more “difficult” and “poor” than when she used the other two. The white accent was considered the most “pleasant”, “educated”, “attractive”, “confident”, “trustworthy” and “rich”. The southern accent scored between the two on most of the rankings. Sounding southern and white costs you a bit; sounding black costs a lot.

Ms Wright is now updating Mr Baugh’s study, calling property managers to find out whether they respond with offers, enticing information or special deals. Overt discrimination—“you can’t see the place”—remains rare, she says; subtle steering towards this or that kind of home is commoner.

The British discriminate on the basis of class and region more than race. British newspapers often report on studies of which accents sound the most pleasant or intelligent (Received Pronunciation, south-eastern and posh without being grand), which the most annoying or ill-educated (Birmingham, Liverpool and Manchester). Ambitious people from outside the south-east are told to “lose their accents” (speak RP, in other words) if they want to do well.

The consequences of voice discrimination are profound. Consider those studies of estate agents. A house in a good area is a ticket to a good school, which allows your children to mix with the right sort of people and thus acquire the right accent so that the virtuous cycle continues. All of this, of course, works the other way around, too.

Society can approach this problem in two ways. One is to expect everyone to learn the most mainstream, least noticeable accent. Black Americans who sound like Barack Obama can expect to be condescendingly called “articulate”, but at least they will face less discrimination. Not everyone, however, has a white parent from whom to learn that accent, and adults can’t easily change the way they speak. An alternative is for people to stop judging each other on the basis of their voices. People can be inarticulate in standard accents, or eloquent in looked-down-upon minority ones. Accent prejudice isn’t just wrong; it’s irrational.

The Shell Petroleum Development Company of Nigeria Limited

Operator of the NNPC/SPDC/TEPNC/Agip Joint Venture



TENDER OPPORTUNITY: PROVISION OF REMEDIATION SERVICES IN BODO CREEK, OGONI LAND

TENDER REF: NG01023738 Nipex Tender Number: 1000003252

1.0 INTRODUCTION

Bodo creek is located between Latitudes 4.55 to 4.64 and longitudes 7.24 to 7.28 in Gokana local government area of Rivers State. The objectives of the remediation project are; a). to reduce the level of contaminants of concern (CoC) in the soil/sediments to the level that promotes net environmental benefit; b). to ensure that the remediation processes support the re-generation of sensitive mangrove vegetation and support replenishment of aquatic fauna; and to achieve the National standard for sustainable remediation as well as international best practice and standard.

The work is planned to commence in October 2018 and will last for 18 calendar months.

SHELL PETROLEUM DEVELOPMENT COMPANY NIGERIA LTD hereby announces to interested and prequalified vendors an upcoming tendering opportunity for the provision of services for remediation of crude oil impacted area in Bodo creek, Ogoniland, Rivers State. The proposed contract will commence in October 2018 and remain active for 18 months duration, followed by 6 months extension option.

2.0 SCOPE OF WORK

1. Remediation of impacted areas in the Bodo creek with the following waste streams
 - a. Asphaltic tar-like weathered/sludgy Crude and burnt crude in sand matrix
 - b. Heavy hydrocarbon impacted sandy soil with intercalations of mud and clay
 - c. Crude oil trapped in chikoko mud on soft mud flats
 - d. Planting of mangrove seedlings in designated areas
2. Basic training of youths for IMO level 1 & 2 oil spill management and issuance of certificates
3. Management of solid and liquid wastes on site and those generated from the project activities
4. Daily and weekly reporting of work activities with geo-referenced photos

Note: Bidders are advised to visit Bodo project site in Ogoni land, Rivers State (at their own cost) before submitting their technical and commercial bids.

3.0 MANDATORY REQUIREMENTS

1. To be eligible for this tender exercise, interested contractor are required to be pre-qualified as essential service vendor in the Product Groups – 3.03.05 (Safety and Environment) or 3.05.21 (Site Clean-up Services) or 3.15.07 (Waste Management Services) (Product/Services) categories in Nipex Joint Qualification System (NJQS) data base. Only successfully pre-qualified suppliers in this category will receive Invitation to Technical Tender (ITT).
2. To determine if you are pre-qualified and view the product/service category you are listed for: Open <http://vendors.nipexjqs.com> and access NJQS with your log in details. Click on Products/Services Status tab to view your status and product.
3. If you are not listed in a product/service category and you are registered with DPR to do business, contact Nipex office at 8/10 Bayo Kuku Road Ikoyi with your DPR certificate as evidence for verification and necessary update.
4. To initiate the NJQS prequalification process, access www.nipex-ng.com, click on services tab followed by NJQS registration.
5. To be eligible, all tenders must comply with the Nigerian Content Requirements in the Nipex system.

4.0 NIGERIAN CONTENT REQUIREMENTS

Vendors are to demonstrate strict compliance with the provisions of Nigerian Oil & Gas Industry Content Development Act and provide the following requirements:

- Demonstrate that the entity is a Nigerian Registered Company, or Nigerian Registered Company as the contracting entity in genuine alliance or joint venture with foreign company with details on scope and responsibilities of parties for this work. Such companies must show evidence of joint venture binding agreement duly signed by the CEO of both companies including evidence or plans of physical operational presence and set-up in Nigeria
- International or multinational company working through a Nigerian subsidiary must demonstrate that a minimum of 50% of equipment to be deployed for execution of work shall be owned by the Nigerian subsidiary by providing a list of equipment for this tender and indicating those that will be owned by the Nigerian subsidiary
- Furnish details of company ownership and shareholding structure. Also submit clear photocopies of your CAC Forms CO2 and CO7
- Provide evidence of what percentage of your key management positions is held by Nigerians and what percentage of the total work force are Nigerians. Also, show overall percentage of work to be performed in Nigeria and those by Nigerian resources relative to total work volume.
- Provide a Nigerian Content Plan providing a detailed description of the role, work scope, man-hours and responsibilities of all Nigerian subsidiary companies and personnel that would be involved in executing the work. Also provide details of Nigerian Content focal point or manager.
- State proposed total scope of work to be conducted by Nigerian personnel (whether contracted directly or under subcontract agreements) with names and addresses including evidences of well-equipped offices and workshop; attach past experience of such patronage.
- Specific to this work, provide detailed plan for staff training and development on equipment repairs & maintenance and procurement (including all software to be used, number of personnel, name of organization providing such training and evidence of past training record) for Nigerian personnel including description of any specific programs in place for transfer of technology and skills to indigenous businesses and Nigerians over the next five (5) years.
- Location of in-country facilities (Storage, workshops, repair & maintenance facilities and testing facilities)
- Vendor must be willing and able to provide evidence of maximization of made in Nigeria goods and services.
- Provide details on any other Nigerian Content initiative your company is involved in.

5.0 CLOSING DATE

Only Tenderers who are registered in the NJQS product/category as at 21st of August 2018 being the advert closing date shall be invited to submit Technical and Commercial bids.

6.0 ADDITIONAL INFORMATION

- All costs incurred in preparing and processing NJQS prequalification shall be to the supplier's accounts.
- This advertisement shall neither be construed as any form of commitment on the part of SPDC to award any contract to any company and or associated companies, sub-contractors or agents, nor shall it entitle prequalified companies to make any claims whatsoever, and/or seek any indemnity from SPDC and or any of its partners by virtue of such companies having been prequalified in NJQS.
- SPDC will communicate only with authorized officers of the pre-qualifying companies and NOT through individuals or Agents.

ES/NCDMB/CERT/SPDC – ADVERT/TSD/220518/ PROVISION OF SERVICES FOR BODO CREEK, OGONI LAND REMEDIATION PROJECT (NG01023738)

Visit us on:  <http://www.shellnigeria.com>  <https://www.facebook.com/Shell>  https://twitter.com/Shell_Nigeria

Please visit the Nipex portal at www.nipex-ng.com for this advert and other information. Also note that this contract will be progressed via the Nipex system.

Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices	Unemployment rate, %	Current-account balance		Budget balance	Interest rates, %	Currency units, per \$	
	latest	qtr*	2018†				latest 12 months, \$bn	% of GDP 2018†			Aug 1st	year ago
United States	+2.8 Q2	+4.1	+2.8	+3.8 Jun	+2.9 Jun	+2.5	4.0 Jun	-465.5 Q1	-2.7	-4.6	2.97	- -
China	+6.7 Q2	+7.4	+6.6	+6.0 Jun	+1.9 Jun	+2.2	3.8 Q2§	+115.1 Q1	+0.7	-3.5	3.20§§	6.80 6.72
Japan	+1.1 Q1	-0.6	+1.1	-1.2 Jun	+0.7 Jun	+1.0	2.4 Jun	+199.5 May	+3.8	-3.8	0.06	112 110
Britain	+1.2 Q1	+0.9	+1.3	+0.8 May	+2.4 Jun	+2.4	4.2 Apr††	-106.3 Q1	-3.6	-1.8	1.45	0.76 0.76
Canada	+2.3 Q1	+1.3	+2.3	+3.8 May	+2.5 Jun	+2.2	6.0 Jun	-53.8 Q1	-2.7	-2.3	2.37	1.30 1.25
Euro area	+2.1 Q2	+1.4	+2.2	+2.4 May	+2.1 Jul	+1.6	8.3 Jun	+474.0 May	+3.3	-0.7	0.48	0.86 0.85
Austria	+3.4 Q1	+9.7	+2.9	+6.2 May	+2.0 Jun	+2.1	4.7 Jun	+9.5 Q1	+2.3	-0.6	0.48	0.86 0.85
Belgium	+1.3 Q2	+1.2	+1.7	+2.9 May	+2.2 Jul	+1.9	6.0 Jun	+0.2 Mar	-0.4	-1.1	0.79	0.86 0.85
France	+1.7 Q2	+0.6	+1.9	-0.9 May	+2.3 Jul	+1.9	9.2 Jun	-9.9 May	-0.8	-2.4	0.75	0.86 0.85
Germany	+2.3 Q1	+1.2	+2.1	+3.1 May	+2.0 Jul	+1.8	3.4 Jun‡	+317.4 May	+7.7	+1.1	0.48	0.86 0.85
Greece	+2.3 Q1	+3.1	+1.8	+0.9 May	+1.0 Jun	+0.7	20.2 Apr	-2.0 May	-1.2	-0.3	3.97	0.86 0.85
Italy	+1.1 Q2	+0.7	+1.3	+2.1 May	+1.5 Jul	+1.2	10.9 Jun	+56.1 May	+2.5	-2.0	2.81	0.86 0.85
Netherlands	+2.8 Q1	+2.3	+2.6	+3.2 May	+1.7 Jun	+1.5	4.8 Jun	+91.3 Q1	+9.6	+0.8	0.53	0.86 0.85
Spain	+2.7 Q2	+2.3	+2.7	+1.6 May	+2.3 Jul	+1.7	15.2 Jun	+20.7 May	+1.5	-2.7	1.24	0.86 0.85
Czech Republic	+3.4 Q1	+2.2	+3.5	+1.4 May	+2.6 Jun	+1.9	2.4 Jun‡	+0.9 Q1	+0.5	+0.9	2.22	21.9 22.1
Denmark	-1.4 Q1	+1.8	+1.8	-1.7 May	+1.1 Jun	+1.1	3.9 Jun	+20.2 May	+6.3	-0.7	0.44	6.38 6.30
Norway	+0.3 Q1	+2.5	+1.9	-5.7 May	+2.6 Jun	+2.3	3.8 May††	+22.8 Q1	+7.4	+5.4	1.88	8.17 7.90
Poland	+5.2 Q1	+6.6	+4.4	+6.8 Jun	+2.0 Jul	+1.7	5.9 Jun§	-1.0 May	-0.6	-2.2	3.16	3.65 3.60
Russia	+1.3 Q1	na	+1.7	+2.1 Jun	+2.3 Jun	+2.9	4.7 Jun§	+64.6 Q2	+3.5	+0.3	8.13	62.9 60.0
Sweden	+3.3 Q2	+4.2	+2.7	+3.7 May	+2.1 Jun	+1.8	7.2 Jun§	+16.8 Q1	+3.3	+1.1	0.60	8.81 8.11
Switzerland	+2.2 Q1	+2.3	+2.2	+9.0 Q1	+1.1 Jun	+0.8	2.6 Jun	+72.9 Q1	+8.7	+0.8	0.04	0.99 0.97
Turkey	+7.4 Q1	na	+4.2	+7.0 May	+15.4 Jun	+12.1	9.6 Apr§	-57.6 May	-5.9	-2.8	18.55	4.92 3.52
Australia	+3.1 Q1	+4.2	+2.9	+4.3 Q1	+2.1 Q2	+2.2	5.4 Jun	-36.8 Q1	-2.6	-1.0	2.65	1.35 1.25
Hong Kong	+4.7 Q1	+9.2	+3.4	+1.0 Q1	+2.4 Jun	+2.1	2.8 Jun††	+14.2 Q1	+3.9	+1.9	2.24	7.85 7.81
India	+7.7 Q1	+10.1	+7.3	+3.2 May	+5.0 Jun	+4.7	5.6 Jul	-48.7 Q1	-2.5	-3.6	7.70	68.5 64.1
Indonesia	+5.1 Q1	na	+5.3	+11.6 May	+3.2 Jul	+3.5	5.1 Q1§	-20.9 Q1	-2.3	-2.5	7.69	14,440 13,322
Malaysia	+5.4 Q1	na	+5.7	+3.0 May	+0.8 Jun	+0.8	3.3 May§	+12.2 Q1	+2.9	-3.3	4.06	4.07 4.29
Pakistan	+5.4 2018**	na	+5.4	+2.7 May	+5.8 Jul	+5.2	5.9 2015	-18.0 Q2	-5.8	-5.4	10.00†††	124 105
Philippines	+6.8 Q1	+6.1	+6.6	+19.8 May	+5.2 Jun	+5.1	5.5 Q2§	-1.9 Mar	-1.6	-2.7	6.53	53.1 50.4
Singapore	+3.8 Q2	+1.0	+3.2	+7.4 Jun	+0.6 Jun	+0.8	2.1 Q2	+61.7 Q1	+18.6	-0.7	2.49	1.36 1.36
South Korea	+2.9 Q2	+2.8	+2.9	-0.4 Jun	+1.5 Jul	+1.7	3.7 Jun§	+72.0 May	+4.8	+0.9	2.59	1,121 1,121
Taiwan	+3.3 Q2	+3.1	+2.6	+0.4 Jun	+1.3 Jun	+1.6	3.7 Jun	+84.8 Q1	+13.4	-0.9	0.87	30.6 30.2
Thailand	+4.8 Q1	+8.1	+4.1	+4.7 Jun	+1.5 Jul	+1.2	1.1 Jun§	+49.2 Q1	+9.7	-3.0	2.57	33.1 33.3
Argentina	+3.6 Q1	+4.7	+1.7	-2.9 Jun	+29.5 Jun	+27.1	9.1 Q1§	-33.8 Q1	-4.7	-5.3	9.22	27.7 17.6
Brazil	+1.2 Q1	+1.8	+1.7	-6.7 May	+4.4 Jun	+3.5	12.4 Jun§	-13.9 Jun	-1.0	-7.1	8.84	3.74 3.11
Chile	+4.2 Q1	+4.9	+3.7	+5.0 Jun	+2.5 Jun	+2.6	7.2 Jun§††	-3.1 Q1	-1.2	-2.0	4.54	641 652
Colombia	+2.8 Q1	+2.8	+2.5	+2.9 May	+3.2 Jun	+3.3	9.1 Jun§	-9.8 Q1	-3.1	-2.0	6.94	2,892 2,969
Mexico	+2.7 Q2	-0.4	+2.3	+0.3 May	+4.6 Jun	+4.4	3.4 Jun	-15.9 Q1	-1.8	-2.3	7.77	18.6 17.8
Peru	+3.2 Q1	+5.6	+3.7	+10.5 May	+1.6 Jul	+1.4	6.6 May§	-2.9 Q1	-1.6	-3.5	na	3.27 3.24
Egypt	+5.3 Q4	na	+5.4	+3.8 May	+14.4 Jun	+16.1	10.6 Q1§	-7.7 Q1	-2.4	-9.6	na	17.9 17.9
Israel	+4.1 Q1	+4.7	+3.9	+4.2 May	+1.3 Jun	+1.3	3.9 Jun	+9.7 Q1	+2.2	-2.4	2.03	3.67 3.56
Saudi Arabia	-0.9 2017	na	+1.0	na	+2.1 Jun	+4.4	6.1 Q1	+21.6 Q1	+7.5	-3.9	na	3.75 3.75
South Africa	+0.8 Q1	-2.2	+1.6	+1.4 May	+4.6 Jun	+4.7	27.2 Q2§	-12.2 Q1	-2.9	-3.6	8.62	13.2 13.3

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ††3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

The Economist

EVENTS

INNOVATION SUMMIT

Building the intelligent company

September 20th
2018
London

20%
discount
on the
standard rate
quote code
ECONMAG

Register today:
events@economist.com
+44 (0) 20 7576 8118

innovationeurope.economist.com

Markets

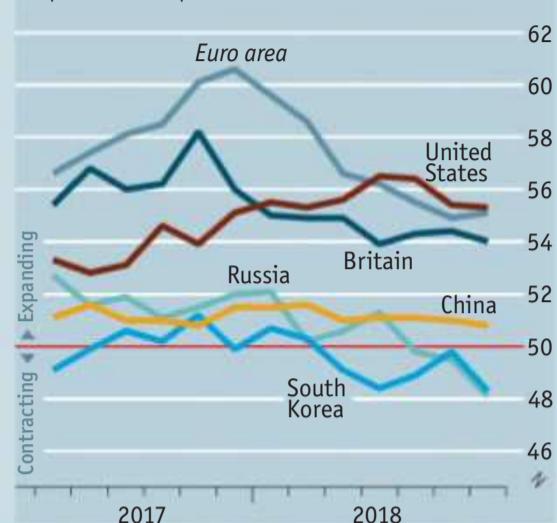
	% change on				
	Index Aug 1st	one week	in local currency terms	in \$ terms	Dec 29th 2017
United States (DJIA)	25,333.8	-0.3	+2.5	+2.5	
China (Shanghai Comp)	2,824.5	-2.7	-14.6	-18.5	
Japan (Nikkei 225)	22,746.7	+0.6	-0.1	+0.6	
Britain (FTSE 100)	7,652.9	-0.1	-0.5	-3.5	
Canada (S&P TSX)	16,376.8	-0.3	+1.0	-2.8	
Euro area (FTSE Euro 100)	1,217.4	+0.9	+0.6	-1.9	
Euro area (EURO STOXX 50)	3,509.2	+1.2	+0.2	-2.4	
Austria (ATX)	3,426.2	+1.8	+0.2	-2.4	
Belgium (Bel 20)	3,894.6	+0.8	-2.1	-4.6	
France (CAC 40)	5,498.4	+1.3	+3.5	+0.8	
Germany (DAX)*	12,737.1	+1.3	-1.4	-3.9	
Greece (Athex Comp)	761.7	+1.2	-5.1	-7.5	
Italy (FTSE/MIB)	21,791.5	+1.1	-0.3	-2.8	
Netherlands (AEX)	572.9	nil	+5.2	+2.5	
Spain (IBEX 35)	9,799.3	+1.0	-2.4	-4.9	
Czech Republic (PX)	1,089.5	-0.1	+1.1	-1.7	
Denmark (OMXCB)	936.1	-0.2	+1.0	-1.7	
Hungary (BUX)	36,207.7	+3.6	-8.0	-13.3	
Norway (OSEAX)	1,014.8	+1.2	+11.9	+12.3	
Poland (WIG)	60,226.4	+2.1	-5.5	-10.2	
Russia (RTS, \$ terms)	1,160.1	+1.6	+0.5	+0.5	
Sweden (OMXS30)	1,612.5	+1.2	+2.3	-4.7	
Switzerland (SMI)	9,174.3	+1.7	-2.2	-3.7	
Turkey (BIST)	97,210.6	+1.9	-15.7	-34.9	
Australia (All Ord.)	6,362.1	+0.3	+3.2	-1.8	
Hong Kong (Hang Seng)	28,340.7	-2.0	-5.3	-5.6	
India (BSE)	37,521.6	+1.8	+10.2	+2.5	
Indonesia (IDX)	6,033.4	+1.7	-5.1	-10.7	
Malaysia (KLSE)	1,788.3	+1.4	-0.5	-0.9	
Pakistan (KSE)	42,810.0	+3.6	+5.8	-5.8	
Singapore (STI)	3,329.0	+0.1	-2.2	-4.0	
South Korea (KOSPI)	2,307.1	+1.5	-6.5	-10.5	
Taiwan (TWI)	11,098.1	+1.2	+4.3	+1.4	
Thailand (SET)	1,722.0	+1.9	-1.8	-3.8	
Argentina (MERV)	29,387.8	+0.1	-2.3	-32.8	
Brazil (BVSP)	79,301.6	-1.1	+3.8	-8.3	
Chile (IGPA)	27,187.2	-0.9	-2.8	-6.6	
Colombia (IGBC)	12,224.0	+1.0	+6.5	+10.0	
Mexico (IPC)	49,449.4	-0.3	+0.2	+5.1	
Peru (S&P/BVL)*	20,407.9	+0.3	+2.2	+1.1	
Egypt (EGX 30)	15,670.2	+3.2	+4.3	+3.7	
Israel (TA-125)	1,413.5	+0.8	+3.6	-2.1	
Saudi Arabia (Tadawul)	8,289.0	-1.3	+14.7	+14.7	
South Africa (JSE AS)	57,399.5	+1.8	-3.5	-8.8	

Manufacturing activity

The latest purchasing managers' indices (PMI) painted a bleak picture. Despite mild improvement on June's 18-month low, the euro zone posted its second-weakest expansion since November 2016, reflecting worries over tariffs. Russia's manufacturing sector contracted for the third successive month, on higher raw-material costs and weakening foreign demand. And Britain's PMI dipped to a three-month low of 54.0, largely because of Brexit concerns and a sluggish economy. China too may be suffering from trade tensions; its PMI slipped to just 50.8. Cost pressures also led America's PMI to slip, though confidence remained strong.

Purchasing managers' indices*

Compared with the previous month



Sources: IHS Markit; Nikkei; Caixin; CIPS

*Based on a survey of purchasing executives

Other markets

	% change on				
	Index Aug 1st	one week	in local currency terms	in \$ terms	Dec 29th 2017
United States (S&P 500)	2,813.4	-1.1	+5.2	+5.2	
United States (NAScomp)	7,707.3	-2.8	+11.6	+11.6	
China (Shenzhen Comp)	1,549.3	-4.6	-18.4	-22.2	
Japan (Topix)	1,769.8	+0.9	-2.6	-2.0	
Europe (FTSEurofirst 300)	1,526.8	+0.7	-0.2	-2.7	
World, dev'd (MSCI)	2,149.4	-0.6	+2.2	+2.2	
Emerging markets (MSCI)	1,086.9	-0.2	-6.2	-6.2	
World, all (MSCI)	519.0	-0.5	+1.2	+1.2	
World bonds (Citigroup)	933.2	-0.7	-1.8	-1.8	
EMBI+ (JPMorgan)	796.9	-0.3	-4.7	-4.7	
Hedge funds (HFRX)	1,262.9 [§]	-0.3	-1.0	-1.0	
Volatility, US (VIX)	13.2	+12.3	+11.0	(levels)	
CDSs, Eur (iTRAXX) [†]	61.6	-1.9	+36.6	+33.1	
CDSs, N Am (CDX) [†]	58.6	-1.4	+19.3	+19.3	
Carbon trading (EU ETS) €	17.8	+2.9	+118.7	+113.1	

Sources: IHS Markit; Thomson Reuters. *Total return index.

†Credit-default-swap spreads, basis points. [§]Jul 31st.Indicators for more countries and additional series, go to: Economist.com/indicators

The Economist commodity-price index

2005=100

	% change on	
	Jul 24th	Jul 31st*
	one month	one year
Dollar Index		
All Items	142.3	144.3
Food	144.9	148.4
Industrials		
All	139.6	140.0
Nfat	137.2	137.3
Metals	140.6	141.2
Sterling Index		
All items	196.8	200.1
Euro Index		
All items	151.2	153.3
Gold		
\$ per oz	1,227.7	1,222.0
West Texas Intermediate		
\$ per barrel	68.5	68.8

Sources: Bloomberg; CME Group; Cotlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional

†Non-food agriculturals.

Speakers include:



HUMAYUN SHEIKH
Founder and chief executive
Fetch.ai



JO SWINSON
Member of parliament
United Kingdom



AIMEE VAN WYNBERGHE
Co-director
Foundation for
Responsible Robotics



MIKE YOUNG
Group chief
information officer
Centrica

[@EconomistEvents](#)
[#EconInnov](#)

Diamond sponsor



Gold sponsor



Silver sponsors





In love with Spitfires

Mary Ellis, née Wilkins, ferry pilot in the Air Transport Auxiliary, died on July 24th, aged 101

THE first time Mary Ellis, then Wilkins, saw the sleek small fighter aircraft parked in the distance on a runway, she fell in love. Perhaps it sounded like nonsense, to fall for an aeroplane. But when she came to make her first flight in one, as a 25-year-old pilot ferrying aircraft between Britain's airfields in the second world war, she knew for certain.

The date was October 15th 1942. From the moment she picked up her chitty in the morning, with the list of planes she had to deliver that day, her heart was pounding with joy. As she climbed in, just the ticket in her Air Transport Auxiliary uniform of dark navy slacks, fur-lined boots and navy jacket with golden wings, she caught a glimpse of her blonde curls in the Perspex canopy of the cockpit. She never wore a leather helmet; it didn't do much for the hairstyle, and she was fond of fashion. But she had not forgotten lipstick and nail polish, because this was an assignation.

Inside the cockpit it was warm, snug and quiet. As she slowly commanded the propeller to turn, turn and spin fast, she felt the Spitfire respond to every move of hers. The thrust and virility she also felt, right through her bones, building to 2,400 revs per minute and a take-off speed of 150mph, came from the magnificent 12-cylinder Merlin engine, erupting like a symphony

and blasting out a three-second show of flame. But the wonderful aircraft itself had become her outer layer, a dynamic metal sheath like the feathers on a hawk. The whole experience, she had to admit, was sexual and orgasmic, and like a dream. Who needed love, with all its tortures and entanglements, when there was this? From the age of three she had wanted her wings to grow so she could reach the shimmering sky. Now she had them she was free, full of adrenalin and purpose.

She had flown many kinds of planes since, at 15, she was allowed to skip hockey at her school in Burford and take flying lessons instead. Most of them were pretty little aircraft, such as Tiger Moths and Swallows. If women were to fly at all, an odd thought in itself, those seemed the right type. Though the shapely Spitfire was often seen as a lady's plane, the notion of a girl at the controls of the sexiest thing going sent a shudder through commanding officers everywhere. The demands of war, the need to get fighter planes to the RAF boys as fast as possible, meant they just had to put up with it—even when this particular girl, all five feet two of her, was silly and romantic enough to write "Wilkins ATA" in the cockpit of one Spitfire, in the hope some handsome chap might get in touch.

The bigger the plane, the worse the pre-

judice. When she flew Wellington bombers, glorious aircraft, so reliable and well-mannered, some ground crews were flabbergasted she was the pilot. (This did not put her off, and she was training to fly four-engine Lancaster bombers when the war ended.) In the ATA itself, which took women from 1940, about 12% of the pilots were female, and not all ferry pools would accept them. The worst, she found, were RAF airfields, where the ground crews often ignored her and, if one wanted to spend a penny, one had to find a bush, as the loos were men-only. She learned early in the ATA not to drink too much tea before a flight—only afterwards, when she sometimes managed a quick bike ride home to her parents near the airfield at Brize Norton, for a cup and a spot of tennis. They never really knew what her job was.

At least after 1943 there was equal pay for men and women of the ATA, about £6 a week. For, after all, they faced the same dangers and had the same scrapes—flying, as they did, without radios, relying only on compasses and Bradshaw's Railway Guides. She met anti-aircraft fire over Bournemouth, barrage balloons suddenly popping up, doodle bugs coming for her, and engine failure. Friends got killed. Each of those horrors she dealt with calmly; one didn't get excited, just got on with the job. Besides, men did not own war; women knew about duty, too. It was terribly annoying when after one crash-landing she had to be rescued by men from a field, because she was besieged by curious cows.

All through, the Spitfire remained her soulmate. When in 1946 she flew one alone for the last time, she reflected that never again would young women have the chance to fly such a beautiful aircraft so often and so freely. Still in love with the fast and the furious, she joined the RAF for a time, flying Gloster Meteor jetfighters, and bought a gorgeous black Allard K1 sports car in which she whipped about the roads and won rallies. She took on the management of Sandown airport in the Isle of Wight, setting up a school there where women could learn to fly. Later she married Don Ellis, a gliding instructor, which brought happy years, though she never took to gliding. She missed engine power.

As the liveliest member of the shrinking band of ATA veterans, straight-backed and without a stick even at 100, she never missed a chance to wear her uniform, trim navy with its golden wings. And at 100 she also, for 15 minutes, took the controls of a Spitfire again. Another flew alongside as an escort of honour, and a co-pilot sat with her, but of course it would have been even more wizard without them. For in her dreams a feisty little Spitfire was always out on the horizon, waiting for her to climb in and become a bird again; away into the clouds, close and fast, on and on. ■

CNBC HELPS ITS AUDIENCES TO GET AHEAD AND STAY AHEAD

For your daily business briefing, visit cnbc.com

